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Economic Development with Stability

This paper is a report made to the Government of India by a Fund mission which, at the request of the Government, visited India in February-March 1953. The members of the mission were Messrs. E. M. Bernstein (Director of the Research Department), Richard B. Goode, Morris Friedberg, and I. G. Patel.

Objectives of Economic Policy

The basic economic problem of India is the widespread poverty of its people. The well-being of the people of India depends on the solution of this problem within the framework of its political system. In the long run the confidence of the people in their own economic, social, and political institutions will be determined more by the success of the Government in dealing with the problem of poverty than by any other single factor.

While the Five Year Plan occupies the central position as the means through which the Government of India proposes to deal with the basic economic problem, it must be implemented by many specific economic and social measures. It is of the utmost importance that the measures taken in various fields should not only contribute to the fulfillment of the Five Year Plan but that they should form part of a consistent economic and social policy. The test of any measure must be a twofold one: first, whether it will avoid deterioration in the present standard of living of the lower income groups; second, whether it will encourage a steady growth in production that will make possible a rising standard of living in the future.

Standard of living

The standard of living of the people of India is among the lowest in the world. There is evidence that this standard of living has deteriorated somewhat since the prewar period. In a country in which the greater part of the consumption of the poor consists of food grains and cloth, the amount of these goods consumed per capita may be regarded as a reliable indication of changes in the standard of living. The information that is available seems to indicate that the per capita consumption of food grains and of cloth is lower now than in the 1930's. The consumption of other goods and services may be somewhat higher than in the past, but this cannot be regarded as offsetting the decline in the per capita consumption of the basic necessities.

The standard of living of the lower income groups leaves almost no margin for reducing their consumption without impairing their health and efficiency. It may even be that a moderate increase in consumption at this time would enable the people to put forth in greater degree the effort necessary to carry out the Five Year Plan. In any event, it is difficult to believe that a further reduction in the consumption of the lower income groups, even for the purpose of providing resources for the Five Year Plan, would be consistent with the broad social and economic objectives of the Government of India or would contribute in a constructive way to the success of the Five Year Plan. Investment in the health, strength, and will of the people is as important to the economic progress of India as investment in plant and equipment.

Although a reduction in the consumption of the lower income groups must be avoided, this does not mean that no resources can be transferred from consumption to investment for the purpose of carrying out the Five Year Plan. There are many persons with incomes above a tolerable standard of living and a much smaller number with very good incomes. Some reduction in the consumption of these income groups may be necessary for a time, although this will impose a burden on many people of modest means. For this reason, it is important that measures taken to secure resources for the Five Year Plan should be not only effective but also equitable. The Five Year Plan is not intended to provide windfall gains for any group; its one purpose is to increase the production and real income of the entire economy.

To protect the present standard of living of the lower income groups, it is necessary to avoid inflation. Any considerable rise in prices, particularly in the prices of food grains, will inevitably make it difficult for large numbers of people to maintain their present consumption of essential goods. Furthermore, inflation will result in an inequitable shift in incomes, with windfall profits to entrepreneurs and arbitrary losses to those who cannot defend their shrinking real incomes. The large rise in prices that has taken place between 1940 and the present has been especially burdensome to fixed income recipients, including civil servants, school teachers and university instructors, and even salaried persons in private employment. No justification can be put forward for the more or less arbitrary further reduction of fixed incomes that would be imposed by an inflation associated with the Five Year Plan.

Economic and social progress

India has faced enormous economic difficulties arising from the disruption of war and partition. It has come through these difficulties with an economy that is reasonably stable and it has begun to regain the ground

that was lost in the past. The progress has been slow, too slow, and must now be accelerated. The minimum objective to be attained in the course of the Five Year Plan is to restore the economy of India to its prewar position. In fact, it is necessary to go much further and provide the means by which production can be substantially increased and with it the level of consumption. Economic and social progress must be an objective of economic policy no less important than the protection of the present standard of living of the lower income groups.

The process of economic development is exceptionally complex. It involves much more than the provision of capital equipment. It requires a social attitude receptive to new fields and new methods of production, institutional arrangements that encourage enterprise and investment, and technical and managerial skills that make new methods of production effective. And it requires a healthy and well-trained labor force that can adapt itself to new methods of production. The Five Year Plan recognizes the importance of a social environment conducive to economic progress. The measures for social improvement are no less essential to the establishment of a progessive economy than the many investment projects designed to increase agricultural and industrial production. Economic progress involves the creation of dynamic forces that will carry the economy steadily forward, seeking and finding new fields and new means for expanding production.

The economy of India has hitherto been static, if not regressive. While the forces that have brought this condition about are numerous, one factor has undoubtedly been the inability to provide savings and undertake investment on an adequate scale. It is not possible to state precisely what the rate of savings and investment has been. The investment that takes the form of improvements on a piece of land or in a cottage industry made by the proprietor himself can be estimated only within broad margins of error. It appears, however, that, in recent years prior to the Plan, net savings and investment have been of the order of 4 to 5 per cent of national income. This was apparently enough to provide the tools and equipment to enable a population growing at the rate of 1.25 per cent per annum to carry on production in much the same way and with approximately the same productive efficiency as in the past. It left little surplus for creating an expanding economy.

The purpose of the Five Year Plan is to raise the level of investment so that, in conjunction with other economic and social measures, aggregate production will begin to rise more rapidly than population. The Plan is intended to raise the level of investment to a little over 7 per cent of the national income and to direct this increase into critical areas that will enable agricultural and industrial production to grow. Invest-

ment on such a scale is still far below the level customarily found in the great industrial countries, and even in many underdeveloped countries. Although this increase in investment is not large, it is vital in order to transform the economy from a stagnant to a progressive state.

There is for every country a critical level of investment necessary to bring about increasing production per capita, that is to say, some degree of advance in productive efficiency. An economy that cannot attain such a level of investment, by use of domestic and foreign resources, will stagnate. While some industries may grow, others will decline, and the over-all level of economic well-being may remain virtually unchanged. On the other hand, an economy that can exceed this critical level of investment will succeed in increasing production per capita and facilitate the improvement of productive efficiency. With a steadily expanding income, the capacity of the economy to provide savings for further development will be somewhat greater. Although the process may be slow, the economy will make progress, and this progress may gain momentum.

The Five Year Plan is intended to raise investment to this critical level. In time, when the national income has increased considerably, the economy may be expected to provide enough savings to make economic progress possible on the basis of its own resources. Even then, investment out of domestic resources will still be inadequate to bring about an increase in productive efficiency at the rate which India is technically capable of undertaking. Such a level of investment is possible only if India's own resources are supplemented by foreign resources. Under the most favorable conditions and with the most generous provision of resources, the economic development of India cannot be accomplished in a five-year period. It is a task to which an entire generation and more will have to be devoted. This Five Year Plan can, however, establish the basis for a progressive economy that will utilize modern means of production and that will be capable of providing the people of India with an improving standard of living.

Development with stability

The achievement of the two basic objectives of economic policy requires that the development of India be carried out in an environment of economic stability. Inflation is a socially costly and economically wasteful means of increasing investment. It encourages excessive investment in inventories, real estate, and foreign balances; and it discourages investment in agriculture and certain fields of industry, particularly if controls hold down prices while costs rise. Thus, inflation diverts the limited resources available for development to sectors where their effect on production is negligible. This is not to deny that there may be a tem-

porary increase in investment as a consequence of inflation; but the experience of many underdeveloped countries is that after an initial increase, which may continue for perhaps two or three years, socially productive investment may revert to an even lower level than prevailed prior to the inflation.

The problem for India is not to secure a short spurt of a relatively large amount of investment. That has been the problem for certain industrial countries at a time when a once-for-all rapid expansion in particular types of production was necessary. For India, however, as for other underdeveloped countries, the basic problem is to secure a steady rise in investment in many sectors of the economy and over a long period—in fact, until the momentum of the economy and the growth in its capacity to save will make such a level of investment normal. It would be shortsighted to jeopardize the structure of the economy and its growth in the directions suited to the needs of the people for the sake of a temporary spurt in investment induced by inflationary means.

Even in the short run, the problems confronting the Government of India would be greatly intensified by inflation. Inevitably, inflation would impair the international payments position of the country. Exports would become less profitable; foreign exchange receipts would decline. The lack of foreign exchange would make it difficult to acquire the imported equipment and materials required for the Five Year Plan. If the payments problem should become very acute, even the ability to maintain adequate imports of food grains and other essential goods, not directly related to the development program, might be threatened. Moreover, it would not be possible to attract foreign capital to supplement domestic resources for development if payments difficulties should emerge and persist.

For these reasons, the Government of India should regard development with stability as its basic economic policy. However, economic stability must not be confused with price rigidity. A growing economy must have sufficient flexibility in its price structure to induce the movement of real resources into those sectors which experience the greatest growth. There may already be excessive price rigidity in India arising not only from the normal stickiness of prices in an economy in which traditional methods of production prevail, but also from the measures taken to control prices. Whatever advantages there may be in price control as an emergency measure, they are likely in the longer run to be outweighed by distortions in production to which they give rise.

Economic stability is consistent not only with a high degree of price flexibility, but even with some movement in the general level of prices. In every country, a rise in the proportion of the national income going into

investment sets up forces that induce an upward adjustment of prices in the sectors in which expansion is relatively large. Such a rise in prices need have little effect on prices in other sectors. This functional rise in prices should not be confused with an inflationary rise in prices. Even if the Government of India had all the resources needed for development, so that there could be no problem of inadequacy of resources, some readjustment of prices would and should occur in conjunction with the implementation of the Five Year Plan.

It is not always easy to distinguish between a functional rise in prices, which is necessary to attract productive resources into the expanding sector of the economy, and an inflationary rise in prices, which is indicative of the inadequacy of productive resources for the economy as a whole. The essence of an inflationary rise in prices is that it reflects a general excess of demand for goods and labor. For this reason, the whole range of prices and wages is likely to rise. Furthermore, as the rise in prices accomplishes no more than the temporary exclusion of the excessive portion of demand, the price rise will continue so long as the inflation persists. Finally, as inflation is a struggle to capture an excessive part of the real output by government, business, or labor, the price rise will grow in intensity as the inflation continues.

In contrast, a functional rise in prices should be confined to a very limited sector, that is, that part of the economy which is expanding rapidly; even in this sector, the rise in prices should be relatively small, just enough to induce a movement of resources to this sector; and this rise in prices should come to a halt rather soon, when productive resources are moving to the expanding sector on the necessary scale. Obviously, when there is inadequacy of productive resources for development, it is not possible to attract them to the expanding sector to the necessary extent by a limited, functional rise in prices. A persistent attempt to maintain a level of investment for which resources are not available must result in the large, steady, and pervasive rise in prices that is the consequence of inflation.

The major danger of inflation in India arises from the need to finance the Five Year Plan. If the real resources for development are adequate for the investment it is proposed to undertake, there will be no inflation, although there will be functional price adjustments. On the other hand, if excessive credit is created to finance the Plan because of a deficiency in savings, it will almost certainly lead to inflation. This does not imply that the creation of credit must inevitably lead to inflation. Some creation of credit is consistent with and even necessary for a stable economy.

On the other hand, excessive caution on credit policy may make it difficult for the economy to generate the resources it is capable of pro-

viding for development. It is never possible to have in hand all the resources required for a development program. By its very nature, most of the real resources for development come into being in the process of production, through taxes and savings arising from current incomes. And the level of current production can be adversely affected by an overcautious credit policy. In determining the scale of the development program and the measures to finance it, the Government must, to some extent, rely on estimates of the probable resources that will be available for development. Its policy should, therefore, be bold without being reckless.

As a practical matter it may be said that there are almost never enough resources for carrying out a planned investment program in an underdeveloped country. For, if investment were going forward on an adequate scale, it would be unnecessary for governments to undertake planning to bring about the desired level of investment. So far as can be foreseen at this time, the resources available to the Government of India are not adequate for carrying out the Five Year Plan. It would be tragic if this essential development program designed to give momentum to the economy of India had to be pared down for lack of resources. It would be unfortunate if the attempt to carry out the Five Year Plan, despite the inadequacy of resources, should lead to inflation. India must find additional resources that will enable the Plan to be achieved in an environment of economic development with stability.

The Present Economic Situation

Like most countries, India emerged from the war with substantially higher prices and a threat of a further rise from the excess liquidity that had accumulated during the war—the latent inflation. The dislocations that followed in the wake of partition added to the inflationary pressures. To establish a basis for economic development with stability, it was necessary first to purge the economy of the forces of inflation. The monetary and fiscal authorities have succeeded in doing this during the last few years. The piled-up latent inflation of the past has at last disappeared, Indian prices have been reasonably stable, and the deficit in the balance of payments has been reduced to what can properly be met by the use of sterling reserves. With this restoration of economic stability, the country is now in a position to undertake a larger volume of investment without risk of an inflation that could get out of hand.

Prices and money supply

Perhaps the best evidence of the internal stability attained in India during the last three or four years is provided by the behavior of prices

(see Table 1). The wholesale price index in June 1953 was 10 per cent higher than in 1948. There are few countries in which the price rise over the past five years has been so moderate. Despite the devaluation of 1949, Indian prices in terms of rupees have taken no sharp upward turn, indicating that the devaluation was largely an adaptation of the exchange rate to the inflation that had already occurred. In fact, as in other countries, the devaluation was an essential means of wiping out the remnants of excessive liquidity and the continued threat of latent inflation.

Because the wholesale price index is weighted heavily with goods that enter into international trade, it did show a sharp rise and fall characteristic of all raw material prices since the beginning of the Korean war. A price index which reflects the operation of internal monetary and fiscal forces would show greater stability from year to year as well. Such an index can be constructed by taking into account only those goods that are both consumed and produced almost entirely at home. In view of the constant necessity of judging the effectiveness of internal fiscal and monetary policies in maintaining economic stability, it would be extremely useful for the Government of India to publish regularly an index of prices of goods produced and consumed domestically and which would be free as far as possible from the direct effects of external fluctuations.

The index of working class cost of living also shows reasonable stability. Such indices are available for nearly a score of cities in India, and show somewhat divergent movements. For Bombay, the index shows an increase of 22 per cent in the last five years, but the rise in most other cities is less pronounced. The significance of the actual increase has to be judged in the light of two important factors: in recent years, some of the items included in the working class cost of living index have been decontrolled, and there has also been a reduction in food subsidies.

TABLE 1. INDICES OF PRICES IN INDIA

(1948 = 100)

	1949	1950	1951	1952	1953
Wholesale prices (all goods)	104	109	120	105	110 (Jun)
Working class cost of living					
Bombay	101	103	109	111	122 (Jun)
All India	—	—	—	106	106 (Mar)

Sources: International Monetary Fund, *International Financial Statistics*, for all series except the cost of living index for All India. That series is adapted from the series published by the Reserve Bank of India in its *Bulletin*, March 1953 and June 1953.

There are many people to whom the conclusion that inflation has been eliminated in India and economic stability restored will come as a surprise. For more than a decade, inflation made serious inroads into the standard of living of certain fixed income groups among the middle class. This is inevitable when prices rise nearly fourfold and some groups lack the economic power to protect their real income. The inflation that impaired their economic position is an inflation of the past, not one of the present. The test of inflation is not whether prices now are higher than they formerly were, and certainly not whether they are higher than in the prewar years. The test of inflation is whether aggregate demand exceeds the value of output at current prices. Inflation is indicated by prices that are rising in the present, not by prices that have risen in the past.

It is not, of course, possible to force a reduction of prices in India in order to undo the injustice of the war and postwar inflation. That would necessitate a serious deflation which would, undoubtedly, halt any progress in the economy. This is not to suggest that nothing should or could be done to redress the wrongs arising from the inflation of the past. It is not feasible to do this, however, by inducing a large and continuing fall in prices in order to shift real income to the fixed income groups. The prewar price level is now very largely a matter only of historical interest.[1] Its significance as a base for price indices which might serve as a guide to current problems and current policies is negligible. It would do much to clarify thinking on economic questions if economic indices were now based on a recent postwar year.

One reason why it was difficult to halt the inflation in the early postwar years was the large accumulation of currency, deposits, and other liquid resources that grew out of wartime conditions. The money supply was too large to allow the monetary authorities to take effective measures that could keep prices from rising. This excess liquidity was finally wiped out by the rise in prices after the temporary decontrol measures in 1947, by the sizable decline in the money supply in all the years since 1948 (except the year after the start of the Korean war), and by the growth in production.

In the absence of comparable national income data, and in view of the hiatus created by partition, it is not possible to state categorically that the money supply today (Table 2) is no more than is required for the needs of the economy as indicated by prewar standards. But all the indirect evidence with respect to changes in prices and production points

[1] A prewar year is used in India as the base for constructing most price indices. In *International Financial Statistics* of the International Monetary Fund all price index series, such as those reproduced in Table 1, have been adjusted so that the index for 1948 equals 100.

to this conclusion. During 1938–39, the money supply in India averaged roughly Rs 4.7 billion, or approximately Rs 13 per capita. If the per capita national product in real terms is no higher at present than before the war, and if there has been no change in the meanwhile in the need for money in relation to income, the normal per capita money supply today should be 3½ to 4 times the supply before the war to take care of the rise in prices. The actual per capita money supply today is approximately Rs 50.

TABLE 2. MONEY SUPPLY IN INDIA[1]

(In billions of rupees)

Date	Money Supply	Date	Money Supply
1947	21.40	1951	18.76
1948	20.28	1952	17.78
1949	18.73	1953 July	18.16
1950	19.36		

[1] Data are for last Friday of period indicated.
Source: International Monetary Fund, *International Financial Statistics*.

There has been a corresponding decline in the liquidity of the banking system, and therefore in the ability of the banks to expand credit on their own initiative. During the war, the commercial banks became highly liquid, and this liquidity showed itself largely in the form of excessive holdings of government securities rather than in the form of excess cash or reserves with the Reserve Bank. This situation made it possible until recently for the banks to expand private credit by liquidating their government assests. The assets structure of the banks has now reverted more or less to the prewar position.

Before the war, investments in government securities equaled roughly one third of the total demand and time deposits of scheduled banks, while credit to business and individuals was equivalent to nearly half of the deposits. At the end of the war, investments in government securities were more than half of deposits, and credit to business and individuals only 30 per cent of deposits. During the last year, government investments were again roughly one third of deposits, and private credit varied between 50 and 60 per cent of deposits. This has made it possible to use monetary policy more effectively. Even if the banks were disposed to liquidate some additional government securities in order to expand credit, they would find it more difficult to do this, since the Reserve Bank abandoned rigid support of the government bond market in November 1951.

During the first half of 1953 there was some increase of prices in India; both wholesale prices and the cost of living (Bombay) rose by nearly 7 per cent. Following the two-year decline in prices, such a rise

need not indicate any imbalance between money supply and production. It does indicate that in India, as in other countries, the authorities must be ready to use the instruments at their disposal to avoid monetary instability.

Balance of payments

Along with the reduction and elimination of inflationary pressures, there has been a significant improvement in the balance of payments in the last three years. As in many other countries, in India the balance of payments has reflected the changing market for its export goods in the different phases of the Korean war. But these changes cannot disguise the basic improvement in India's payments position. A broad indication of this position is given by item 6 in Table 3. This item is the total of goods, services, private donations, private capital movements, contractual official payments, and the resources for development provided by the International Bank for Reconstruction and Development, the Colombo Plan, and the U.S. Mutual Security Administration grants. In

TABLE 3. BALANCE OF PAYMENTS OF INDIA

(In millions of rupees)

	1948	1949	1950	1951	1952[1]
1. Goods, services, and private donations	−555	−1,837	433	−461	−499
2. Private capital movements	−154	−210	−88	−24	−19
3. Net errors and omissions	−417	416	−169	−243	−311
4. Official contractual payments	—	−25	−27	−28	−19
5. Official development financing[2]	—	70	116	62	146
6. Total (1 through 5)	−1,126	−1,586	265	−694	−702
7. U.S. food loan	—	—	—	380	526
8. Transfer of sovereignty[3]	−2,840	−119	—	−29	−32
9. Monetary movements	3,966	1,705	−265	343	208

[1] Includes transactions with Pakistan.

[2] Mainly IBRD loans, Colombo Plan, Point Four, and ECA/MSA grants for development. Grants from the Ford Foundation, although it is not a government agency, are also included.

[3] Transactions associated with the transfer of sovereignty involved the purchase of the pensions annuity to cover India's liability for pensions to former Indian Civil Service employees, and the purchase of defense stores and installations in India (1948–49), and also the repatriation of Indian currency from Aden (1951–52). These transactions were offset in "monetary movements"—e.g., by the release of blocked sterling balances in 1948–49.

Source: Balance of Payments Division, International Monetary Fund. Adapted from data to be published in the forthcoming *Balance of Payments Yearbook*.

1948 there was a deficit on this entire group of transactions of about Rs 1.1 billion, the equivalent of approximately $330 million. In 1949 the deficit was about Rs 1.6 billion, the equivalent of approximately $450 million. In 1950 there was a small surplus. In 1951 the deficit reappeared, amounting to about Rs 700 million, the equivalent of approximately $150 million; and in 1952 the deficit was approximately the same. This deficit is not in excess of the reduction of reserves that the Government of India is willing to have. It is not the magnitude of this deficit, but the need to continue import restrictions, that is the true indication of India's balance of payments problem. The payments problem has not, of course, been solved; but the improvement that has taken place in the payments position has reduced the problem to one of manageable proportions.

TABLE 4. GOLD AND FOREIGN EXCHANGE ASSETS OF THE RESERVE BANK OF INDIA[1]

(In millions)

	Rupee Value[2]	Dollar Value[2]	Change in Rupees	Change in Dollars
1948	10,670	3,354		
1949	8,660	1,982[3]	−2,010	−1,372[3]
1950	8,740	2,000	+80	+18
1951	8,210	1,888	−530	−112
1952	7,460	1,729	−750	−159
1953 July	7,440	1,726	−20	−3

[1] Data are for last Friday of period indicated.
[2] The rupee figures include gold at the value at which it is carried in the books of the Reserve Bank. The dollar figures value gold at $35 an ounce.
[3] Reflects change in dollar valuation of assets as well as use of reserves.
Source: International Monetary Fund, *International Financial Statistics*.

The strengthening of the payments position has been reflected in the behavior of official reserves (Table 4). During the one year 1949, the foreign assets held by the monetary authorities in India declined by about Rs 2 billion, equivalent to about $550 million, at the average dollar exchange rate of that year. In the three years 1950 to 1952 and the first quarter of 1953 together, the foreign assets in the hands of official entities have been drawn down by only Rs 1 billion, about $210 million. For a country which accumulated extraordinary reserves during the war and which is in urgent need of resources for development, the use of reserves at the average rate of approximately $70 million per year is obviously not excessive. In fact, the actual use of reserves during the period under consideration has fallen short of the agreed releases of sterling. The large U. S. Wheat Loan of $190 million, of course, helped to minimize the use of reserves in 1951 and 1952. But the loan was in response to an extraordinary misfortune, and even when account is taken of this loan,

the general balance of payments situation has improved significantly since the devaluation of 1949.

There has also been some improvement during the past few years in the payments position with respect to hard currency areas, although this improvement has been overshadowed by a number of other developments. Regional totals similar to those recorded under item 6 of Table 3 are not available in revised form for the years 1948-52; but the current account balance (i.e., goods and services, donations, and some unclassified items) gives some indication of the regional payments position.[2] India's deficit on current account with hard currency areas amounted to Rs 430 million in 1948 and Rs 490 million in 1949. But in 1950, India actually recorded a surplus of about Rs 265 million, largely on account of the boom in raw material prices after the outbreak of the Korean war. The reaction to this boom, combined with the large emergency imports of U.S. wheat, led to a sharp deterioration in 1951 and 1952, and the combined deficit for the two years amounted to Rs 1.8 billion. About half of this deficit is represented by emergency imports of wheat. Apart from these imports covered by the U. S. Wheat Loan, the deficit with the hard currency areas in 1951 and 1952 was about 30 per cent less, measured in dollars, than in 1948 and 1949, although the deficit measured in rupees was virtually unchanged. The dollar payments position has improved in 1953, and India actually contributed to the sterling area dollar pool in the first half of the year.

The maintenance of internal stability is essential to, but not necessarily a guarantee of, a satisfactory balance of payments position. The absence of inflationary pressures at home ensures that the home demand for imports and for exportable goods will not be excessive. But the ability of a country to maintain exports depends upon the state of markets abroad and on the adaptability of its export industries to changing circumstances. In recent months, the principal exports of India, viz., jute, tea, and cotton textiles, have had to face a serious market situation. In part, this reflects the changing character of international markets in which price and quality competition are becoming increasingly keen. While the present position of India's exports is less favorable than it has been, there is no reason for assuming that the export industries will decline. Nevertheless, for the longer run, India needs to diversify its export trade, and this is a problem to which greater attention should be given.

Despite the decline in exports, India has added to its reserves moderately since July 1952. This is due largely to the sharp decline in imports.

[2] Reserve Bank of India, *India's Balance of Payments, 1948-51*, and *Bulletin*, April 1953.

The decline is likely to be reversed in the coming months in view of the general destocking of commodities evident during most of 1952. The terms of trade for India, which are worse today than they were either in 1948 or before the Korean war, may improve somewhat as demand begins to reflect more fully current needs. While the balance of payments may be regarded as satisfactory for the time being, it is necessary to strengthen the payments position, primarily by expanding exports, in order to meet larger import requirements in the future and service requirements on foreign capital for the Five Year Plan.

Economic controls

The Government of India has very extensive powers for the control of almost all phases of the economy. During the war, and for a time after the war, many of these controls were used; but with the curtailment of inflationary pressures in recent years, the controls have been relaxed. Apart from price control and some rationing of food grains, they do not extend very much to the consumer level. Nevertheless, they are not without significance to the economy of India, for they affect to some extent production, marketing, and investment in several major industries.

Under existing enabling legislation, the Government possesses extensive powers of control over all major industries. In practice, these far-reaching controls have not been fully applied. The prices of a few important industrial commodities like steel, coal, and cement are controlled; there is allocation of a few commodities; and there is some control of output as in the case of mill-made dhotis. On the investment side, the Government has the power to license new enterprises and the Capital Issues Control scrutinizes the flotation of new issues.

The most important controls affecting consumers are those relating to food grains. About 28 million to 30 million people, mainly in larger towns and cities, are covered by the statutory rationing of food grains.[3] To facilitate the operation of this partial rationing, a compulsory levy at controlled prices is enforced in a number of States. There is also a variety of restrictions on the movement of foodstuffs within the country, particularly from surplus to deficit areas. In order to prevent any undue discouragement of food production resulting from these measures, the prices of some of the other cash crops are also controlled. Where this has resulted in bringing domestic agricultural prices significantly below international prices, it has been necessary at times to restrict exports.

The major justification given for the continued control of food grains

[3] Since the writing of this report, the rationing of wheat has been terminated in most cities.

is the fear that scarcities may develop if controls are lifted. In particular, it is argued that expenditure on foodstuffs would increase, leading to a rise in prices. The consequent rise in the cost of living would presumably affect wages, leading the economy into higher costs and prices. This price rise could be checked by imports, if even a moderate amount of foreign exchange were used to increase imports. There is informed opinion that the extra imports needed to do away with rationing of wheat without any pressure on prices would be rather small. It is probable that rationing of rice cannot be dispensed with until domestic production increases significantly or imported rice is available at lower prices. There is much to be gained, economically and psychologically, in giving complete freedom to consume the basic food grains of which adequate supplies can be procured. This is the situation with respect to wheat.

Controls are widely regarded in India as a necessary adjunct to planning. A plan for economic development sets up certain targets for production and envisages certain priorities. These targets and priorities in turn require a certain distribution of resources among different sectors of the economy. This could be accomplished by adjustments in relative prices or by allocations. The distrust of the use of the price mechanism for this purpose reflects partly a fear that price adjustments over a wide area are really a form of inflation, partly a feeling that socially important uses might be excluded from the market on a price basis. In fact, however, it is quite impossible to take into account through controls and allocations the diverse economic considerations that enter into the proper distribution of productive resources in a developing economy. Provided inflationary pressures can be avoided, there are great advantages in allowing the economy a large measure of freedom. The possibility of using controls to check the inflationary pressures that would appear if development were carried out in the face of a serious shortage of resources is further discussed in a later section, Price Controls, Rationing, and Allocations.

The restriction of imports has reflected the payments position of India and the sterling area. In recent years, India's import policy has alternated between successive phases of liberalization and intensified restriction. When the external position has improved for some time, restrictions on imports have been liberalized, partly to permit the economy to absorb the agreed releases of sterling balances. There is naturally a tendency to err on the side of optimism at such a time, and the actual flow of imports becomes excessive. This development is aided by the eagerness of importers to pile up stocks during a period of leniency in view of the uncertainty about future restrictions. When imports become ex-

cessive, restrictions are clamped down more heavily, perhaps erring on the side of pessimism.

Such alternations of too much and too little supplies from abroad are not desirable from the point of view of domestic industries. Furthermore, they encourage a speculative attitude toward the holding of stocks of import goods. In all probability the pattern of import goods made available for the people of India is a less useful one because of the sudden changes in import policy. It would be desirable for the Government to set out a longer-term import policy based on average expectations over the next three or four years. This would give domestic consumers and producers a more definite idea of what to expect in the way of import policy. Clearly, no hard and fast import plans extending over a number of years can be drawn up; but there is some scope for reducing the variations in the flow of imports from year to year.

While quite often the persistence of controls is indicative of underlying inflationary pressures or severe payments difficulties, the controls that are still in effect in India are largely nominal, with the major exceptions of rationing of food grains and restrictions on imports. These controls do not arise out of inflationary pressures, although foreign exchange receipts are not at present sufficiently large to allow the removal of all restrictions on imports. There is good reason, nevertheless, to consider the desirability of dispensing with wheat rationing and meeting the needs of consumers through larger imports. As the economy of India is confronted with the need for greater adaptability to the Five Year Plan, it would be desirable to reconsider the whole range of controls now in effect, and to dispense with those which are not essential to protect the consumption of the lower income groups.

The Development Program, 1951–56

The development program covers the entire Indian economy, both public and private, and for purposes of analysis may be divided into three parts—the public or government sector, the organized industry sector, and the unorganized sector. The Five Year Plan sets up a detailed blueprint of development expenditures by the Central and State Governments and a somewhat less detailed blueprint for 42 of the larger industries, which provide about two thirds of the total industrial output of the country. For the rest of the economy—the unorganized sector, comprising agriculture, the small factories and cottage industries, private transport, residential construction, etc.—the program implicitly sets up targets to be achieved by the end of the five-year period. These targets are, of course, related to the expansion in the other two sectors. The Five Year Plan is therefore essentially a plan for the development

of the whole economy. The subsequent discussion is not concerned with the adequacy of the Plan, but with the financial problems to which it gives rise.

General scope of the Plan

The purpose of the Plan is to bring about a general increase in productivity throughout the economy so that national income at constant prices will be increased from an estimated Rs 90 billion in 1951–52 (the first year of the Plan) to an estimated Rs 100 billion in 1955–56 (the last year of the Plan). This is to be accomplished by providing the means for expanded and more efficient production, principally through developmental expenditures in the public sector and the organized industry sector, amounting to almost Rs 27 billion over the five-year period. An effort will also be made to stimulate investment in the unorganized sector, for this sector accounts for a major part of the national income. Although output in the unorganized sector will be increased by investment in other sectors, the attainment of the target for national income depends also on investment in the unorganized sectors.

The Five Year Plan, as any development program must, provides for a volume of investment greater than that which presumably would have been undertaken in the absence of the Plan. Net investment is to increase from about 5 per cent of national income at the beginning of the Plan to an average of a little over 7 per cent of national income over the five years. The estimates include investment in the unorganized sector, but for this sector the figures are necessarily inferential in character.

Although the Five Year Plan aims at a large increase in the rate of investment, it would still remain low in comparison with that prevailing in many countries. In the great industrial countries of North America and in certain developed countries of the Commonwealth, particularly in Canada, Australia, New Zealand, and South Africa, gross investment amounts to nearly 15 per cent, and in some instances even more, of gross national product. A ratio of 10 per cent for gross investment to gross national product is found in some underdeveloped countries of Latin America and other regions. These data are not strictly comparable and there may be a bias toward underestimating the rate of investment in India. Even so, the planned level of investment is a smaller proportion of output in India than is customarily undertaken in some underdeveloped countries without the stimulus of a plan.

Development in the public sector

Development expenditures of the Central and State Governments are expected to include approximately Rs 17 billion of net investment and

Rs 4 billion of expenditures for agricultural extension services, health, community projects, and the like (Table 5). Government investment during the period of the Plan would constitute about half of the total investment. In 1950–51, public investment was about two fifths of the total.

The emphasis on the public sector is not a consequence of undue concentration of economic activity in the hands of Government. Rather, it is a necessary concomitant of the early stages of development in a predominantly agricultural country. Government investment is necessary for irrigation, power, and transport and communications projects which provide the basis for a more highly developed agricultural and industrial economy in the future. Certain direct expenditures on agricultural development, such as the provision of fertilizers, better seeds, and livestock improvement, as well as for rural community development through agricultural extension activities and cooperative organization, cannot be undertaken under present conditions except under government sponsorship. As these primary developmental needs are better met, it may be expected that the role of private investment in agriculture and industry will become greater.

TABLE 5. DEVELOPMENT EXPENDITURES IN THE PUBLIC SECTOR, 1951–56, UNDER INDIA'S FIVE YEAR PLAN

	Billion Rupees	Percentage of Total Outlay
Agriculture and community development	3.61	17.5
Irrigation and power	5.61	27.1
Transport and communications	4.97	24.0
Industry	1.73	8.4
Social services	3.40	16.4
Rehabilitation	.85	4.1
Miscellaneous	.52	2.5
Total	20.69	100.0

Source: Adapted from Government of India, Planning Commission, *The First Five Year Plan* (New Delhi, December 1952), p. 70.

Of total development expenditures of Rs 20.7 billion in the public sector, Rs 8.3 billion (40 per cent) is to be undertaken by the States. In fact, in the first two years of the Plan, for which accomplishment data are available, the development outlays of the States under the Plan, Rs 2.85 billion, have been very little less than the development outlays of the Central Government under the Plan, Rs 2.99 billion. Some of the very largest multipurpose irrigation and power projects are under the sponsorship of the States. The large role assigned to the States is an

administrative necessity in a federal country with the vast area and the numerous rural communities of India.

Development of agriculture

The Five Year Plan places great emphasis on the development of agriculture. The planned outlays on power, railroads, and communications are intended to serve the economy as a whole, but to a very large extent such investment will be of special significance to agriculture. A considerable part of the development expenditures of a non-investment character, such as extension, health, and education services, are for the rural community and are intended to increase the well-being and efficiency of people working in the agricultural sector.

The emphasis on agriculture is justified by its basic importance in the economy of India. With perhaps 70 per cent of the persons gainfully employed working in agriculture and about 50 per cent of the national output represented by agricultural production, any significant economic progress must begin with agriculture. Obviously, any rise in the standard of consumption must be based on a larger supply of food grains, and this must come primarily from more efficient agricultural production.

Agriculture will for a very long time be the most important occupation of the people of India. Even a very ambitious industrial development program can provide employment for only a part of the natural increase in the labor force. Such industrial development would undoubtedly have certain beneficial effects on agriculture by providing equipment, tools, fertilizers, and other materials for more efficient agricultural production. Beyond that, new job opportunities in industry and commerce would relieve somewhat the pressure for employment in agriculture and to that extent affect favorably the productivity of those remaining in agricultural employment.

Useful as these indirect effects of industrial development can be to agriculture, the problem of inadequate productivity can be solved only by providing directly the means for more efficient production in agriculture. A wider knowledge of the proper use of selected seeds, fertilizers and insecticides, and improved techniques in planting and caring for growing crops, can have a tremendous effect on yields. The wider use of better methods can be attained gradually as agriculturists learn from each other the improved techniques. An extension service and agricultural courses in the rural schools will increase the receptivity of the agricultural workers to new methods.

It is probable, however, that the willingness of agriculturists to try new methods of production can be sharply increased by making water available to regions that lack irrigation facilities. It is not only that tra-

ditional methods of growing must in any case be modified to make use of a regular water supply, but the economic risks of investment in seeds, fertilizers, and insecticides become negligible when their beneficial effect on crops is assured by the availability of water. The key role of water in agriculture is recognized by the large investment to be made in irrigation: Rs 1.7 billion is to be spent for major and minor irrigation works and an additional Rs 2.7 billion for multipurpose projects. The total area to which irrigation will be brought is about 20 million acres, representing an increase of nearly 40 per cent in the irrigated area.

There is another reason why primary emphasis must be given to agricultural production. A balanced development program must provide for increasing production in those fields in which there is demand. By far the greatest part of the increase in demand, arising from the higher incomes that will come with the development of the economy, will be for agricultural products. Perhaps as much as one half of the increase in consumer expenditure will be for food grains, and a not insignificant part of the increase in other consumer expenditure will be for cotton cloth. This direct and indirect demand for agricultural products can best be met by an expansion of production within India. For some of these goods, such as rice, supplies are not available from abroad at prices that would make larger imports an attractive alternative to domestic production. In any event, the expansion of agricultural production is necessary if India is not to become excessively dependent on imports of essential consumer goods.

Targets for the principal agricultural crops are shown in Table 6. A substantial increase in food grain production is perhaps the most important phase of the program. The objective is to permit a small increase in per capita consumption. While it is hoped that by the end of the Plan

TABLE 6. TARGETS, UNDER INDIA'S FIVE YEAR PLAN, FOR PRINCIPAL AGRICULTURAL CROPS, 1955–56

	Output, 1950–51[1]	Target, 1955–56[1]	Estimated Percentage Increase, 1950–51 to 1955–56
Food grains (million tons)[2]	54.0[3]	61.6	14
Cotton (million bales)	3.0	4.2	42
Jute (million bales)	3.3	5.4	63
Sugar cane (million tons)	5.6	6.3	13
Oilseeds (million tons)	5.1	5.5	8

[1] From Government of India, Planning Commission, *The First Five Year Plan* (New Delhi, December 1952), p. 75.

[2] Includes gram and other pulses.

[3] The figure refers to 1949–50, which was chosen as the base for fixing the target for 1955–56. Production in 1950–51 was 52.7 million tons.

the need to import food grains will have been eliminated, this will probably not be possible without some control over consumption. The planned increases in raw cotton and jute production are intended to allow a reduction in imports of these commodities and an increase in production of cotton and jute textiles.

Development of industry

While the development of the industrial sector in the initial stages is to be on a smaller scale than that of agriculture, it must ultimately become an important means for the modernization of the economy. As in all underdeveloped countries, there is a lack of work opportunities in fields where efficient production can be undertaken on a substantial scale. The nonagricultural sector must in time provide work opportunities for the whole of the increase in the labor force. While much of the future increase in employment will have to be in commerce, transport, and public utility services, the extent to which work opportunities will become available in these fields will depend in large part on the expansion of industry.

The investment in the government sector in power, transport, and communications is a prerequisite for the expansion of industrial as well as agricultural production. In particular, the development of more efficient production in many small-scale establishments, including cottage industries, throughout the country depends on the availability of cheap power. The addition of 1.2 million kilowatts of installed generating capacity, raising the supply of electrical power by more than 50 per cent, will make possible the growth of industrial production in the large cities and the smaller centers of population. At the same time, it will provide more adequate facilities for supplying consumers with electricity.

TABLE 7. DISTRIBUTION OF INVESTMENT IN ORGANIZED PRIVATE INDUSTRY, 1951–56, UNDER INDIA'S FIVE YEAR PLAN

(In billions of rupees)

	Planned Distribution
Expansion	2.33
Modernization and replacement	1.50
Working capital	1.50
Current depreciation expenditure not covered by normal income tax allowances	.80
Total	6.13

Source: Government of India, Planning Commission, *The First Five Year Plan* (New Delhi, December 1952), p. 436.

Estimates of the investment to be undertaken in the industrial sector are, of course, more reliable for the organized private industrial sector, where gross investment of more than Rs 6 billion is expected under the Five Year Plan (Table 7). A large part of the outlay is for modernization and replacement and to supplement the current depreciation not covered by normal income tax allowances. No doubt such expenditure on replacement and modernization, even if it does not represent net new investment, results in some rise in the efficiency of production. The substantial increase in production is, however, to be provided by the investment of Rs 2.33 billion for expanding plant and equipment. A very considerable part of the net increase in investment must go into working capital, in the form of raw materials, goods in process, finished goods awaiting sale, etc. The Plan's production targets for selected industries are shown in Table 8.

No direct estimates of investment in the unorganized sector (agriculture, small-scale industry, private construction, etc.) are available. Funds for investment will presumably come from the ordinary receipts

TABLE 8. TARGETS, UNDER INDIA'S FIVE YEAR PLAN, FOR SELECTED MANUFACTURING INDUSTRIES, 1955–56

	Output, 1950–51[1]	Target, 1955–56[1]	Estimated Percentage Increase, 1950–51 to 1955–56
Iron and steel (thousand tons)			
Pig iron available for foundries	350	660	89
Finished steel	980	1,370	40
Cement (million tons)	2.7	4.8	78
Aluminum (thousand tons)	3.7	12.0	224
Fertilizers (thousand tons)			
Ammonium sulphate	46.3	450.0	871
Superphosphate	55.1	180.0	226
Locomotives (number)	...	150.0	...
Machine tools (thousands)	1.1	4.6	318
Petroleum refining			
Liquid petroleum (million gallons)	...	403.0	...
Bitumen (thousand tons)	...	37.5	...
Cotton manufactures			
Yarn (million pounds)	1,179	1,640	39
Mill cloth (million yards)	3,718	4,700	26
Handloom (million yards)	810	1,700	110
Jute manufactures (thousand tons)	892	1,200	35
Agricultural machinery			
Pumps, power-driven (thousands)	34.3	85.0	148
Diesel engines (thousands)	5.5	50.0	809
Bicycles (thousands)	101.0	530.0	425
Power alcohol (million gallons)	4.7	18.0	282

[1] From Government of India, Planning Commission, *The First Five Year Plan* (New Delhi, December 1952), pp. 75–76.

or savings of the proprietors undertaking the investment. It is possible that worth-while investment on a larger scale could be undertaken in smaller enterprises if better provision could be made to provide finance for such investment. As the modernization of the small and medium-sized enterprises in the rural regions could provide full and part-time employment for many people now engaged exclusively in agriculture, there is a need to consider what measures could be taken to encourage a greater development of such industries.

International payments and the Plan

Although there has been a considerable improvement in the payments position of India in recent years, it is necessary to ensure that the balance of payments does not deteriorate under the pressures exerted by the Five Year Plan and that a new balance of payments is gradually developed, suited to the economy of India as it emerges with development. Furthermore, India's present exports are concentrated on too limited a group of goods, some of which are highly sensitive to business conditions abroad and whose prices fluctuate rather widely.

During the period in which the planned investment is undertaken, the demand for imports will increase. This increase will take place because of the greater need for equipment and the greater demand for consumer goods. It may be possible to hold this demand in check through intensified restrictions on imports, but this will mean that the economy is deprived of goods it urgently needs. In the longer period, as the economy develops and incomes increase, the rise in production and consumption will necessitate a larger volume of imports of consumer goods, raw materials, and equipment. If India succeeds in securing foreign capital for investment under the Plan, the immediate pressure on payments will be relieved, but it will be necessary in the future to earn enough foreign exchange to meet current import requirements and the service obligations on foreign capital. A balanced development program must take into account not merely balance in the expansion of the different sectors of the domestic economy but the need to maintain balance in foreign payments.

If the development of the economy is properly related to those fields in which India can expand production efficiently and for which demand can be found at home and abroad, the payments position will reach a proper balance. The targets for expanded production are related to the goods for which a known demand exists at home. To that extent they will result in a reduction of imports or will limit the future increase in imports. For food grains and cotton the expansion of domestic production to meet increased home demand has already been noted. There will also

be increases in production of raw jute, fertilizers, aluminum, cement, and artificial silk yarn, all of which will make possible a future reduction of imports. The expansion of production in other fields may limit the future need for imports without bringing about an actual reduction.

It is, nevertheless, clear that a general rise in production and incomes in India will necessitate a larger aggregate volume of imports, not only in the immediate future, but also in the longer run as production and incomes increase. The development of the economy in a manner that will maintain external balance requires a gradual growth in exports to meet the larger foreign exchange requirements of the future. The Five Year Plan does make provision for an expansion of production in fields in which India has a capacity for meeting competition in world markets. The targets for expansion of exports (Table 9) include not only the products which have been traditional exports, but also a more diversified group of commodities, some of which have been of only minor importance in India's export trade.

TABLE 9. TARGETS, UNDER INDIA'S FIVE YEAR PLAN, FOR VOLUME OF EXPORTS OF SELECTED PRODUCTS, 1955–56[1]

	Estimated Percentage Increase, 1948–49 to 1955–56
Cotton piece goods	193
Jute yarns and manufactures	7
Manganese ore	223
Oils	167
Coal and coke	164
Black pepper	113
Tobacco	71
Coir manufactures	96
Woolen manufactures	93

[1] Based on data from Government of India, Planning Commission, *The First Five Year Plan* (New Delhi, December 1952), p. 458.

Apart from the longer range payments problem which is to be met by the expansion of production of export and import goods, the Five Year Plan presents an immediate payments problem arising out of the higher level of investment called for by the Plan and the higher level of consumption which is incidental to it. Assuming that the program is carried out as planned, the Planning Commission estimates that there will be a "likely and even necessary" deficit in the balance of payments, at current export and import prices, of about Rs 1.8 billion to Rs 2.0 billion per annum in each of the three remaining years of the Plan. If deficits totaling Rs 5.5 billion to Rs 6.0 billion were to materialize in the last three years of the Plan, it is clear that they could not be financed merely from the scheduled releases of sterling balances. The financing of the remainder

would depend on the availability of additional external aid. If additional external resources are not forthcoming, import controls of varying degrees of severity will be needed to maintain the foreign exchange deficit within the available exchange resources, including the sterling releases.

Availability of Resources for Development

Whether the investment envisaged in the Five Year Plan can be undertaken without giving rise to severe inflationary pressures will depend upon the adequacy of resources. If the total planned investment exceeds the available resources, either actual investment will fall short of the planned investment or inflationary pressures will develop. If the available resources are equivalent to the total planned investment, then there should be enough resources to carry out the planned investment in each sector. An apparent inadequacy of resources for any sector would then be a problem of finance.

Investment and savings during the Plan

The aggregate investment expected in the Plan can be inferred only indirectly from estimates of savings and a target for foreign resources (Table 10). Over the period of the Plan as a whole, a total of Rs 27 billion to Rs 28 billion is assumed to accrue as domestic savings. This

TABLE 10. ESTIMATE OF RESOURCES AVAILABLE FOR INVESTMENT IN INDIA, 1955–56[1]

	Estimated Resources (*billion rupees*)	Percentage of Total
Domestic savings	27 to 28	77.5
Foreign resources	8.0	22.5
Sterling balances	*2.9*	
Assured foreign aid	*1.56*	
Private foreign investment	*1.0*	
Additional foreign assistance expected but not assured[2]	*2.54*	
Total resources	35 to 36	

[1] Derived from Planning Commission estimates.

[2] This gap of Rs 2.54 billion, included as "additional foreign assistance expected but not assured" in the estimated total resources available for investment, is purely residual. It is not directly comparable with the gap of Rs 6.55 billion in the financing of the Government's own developmental expenditures (Table 11). The latter figure represents the total amount that the Government expects to obtain from additional foreign aid or by additional taxation, borrowing, or deficit financing (including deficit financing equal to the agreed release of Rs 2.9 billion of sterling balances).

estimate is based on the assumption that 20 per cent of the increase in income during the period of the Plan would be devoted to extra savings. If allowance is made for the increase in population during the period, the estimate implies that nearly one half of the increase in per capita output would be devoted to additional savings and the other half to increased consumption.

The Rs 27 billion to Rs 28 billion of domestic savings would be supplemented by foreign resources represented by the balance of payments deficit on current account. The Plan envisages that India's sterling balances would be drawn down by Rs 2.9 billion. The external assistance assured at the time of the Plan in the form of the U.S. Wheat Loan, the Colombo Plan grants, the Technical Cooperation Agreements, and International Bank loans amounted to Rs 1.56 billion. The Plan also contemplates an inflow of Rs 1 billion of private foreign capital during the period. To this must be added any additional foreign grants or loans, of which there have been some, since the Plan was drafted. It is hoped that the total external resources available for the Plan would amount to about Rs 8 billion. In sum, therefore, the expected total investment during the period of the Plan, as indicated by total resources, may be put at Rs 35 billion to Rs 36 billion.

It should be emphasized that this over-all picture of investment and the resources from which it is expected to come is no more than an indication of the order of magnitudes involved. The basic problem is whether it is feasible to raise this amount of resources. Before any conclusion can be reached, it is necessary to consider the investment and resources available to different sectors of the economy, in particular, the Government and organized private industry. A terminological caution must also be given at this stage. The accounts of the Government are not kept in a form which makes it easy to separate investment expenditure from non-investment expenditure. What the Plan refers to as "developmental expenditure" is not, therefore, synonymous with investment as normally understood, and as implied in the over-all figure of Rs 35 billion to Rs 36 billion given above.

Financing the public and private sectors

The total developmental expenditure of the Central and the State Governments over the five years is expected to be Rs 20.7 billion. If this expenditure is to be financed without inflation, it must be met from public savings, loans from private savings, foreign aid, and other unallocated resources. The public savings comprise the excess of government tax receipts over nondevelopmental expenditure and the profits

of government enterprises, principally the share of railway profits assigned to the Government. The private savings absorbed by Government comprise loans from the public, small savings, and various special funds which will accumulate during the period of the Plan. As for the remainder, the Government can secure finance through additional taxation, borrowing, foreign assistance, and the creation of credit (Table 11).

The Plan also gives detailed estimates of investment in 42 organized industries, some of which belong to the public sector and as such are covered by the government expenditure of Rs 20.7 billion. The plans for investment in the organized private sector are worked out in cooperation with the industries; but they cannot represent targets as firm as developmental expenditures in the public sector. It should also be remembered that the outlay in organized industry is not, strictly speaking, all net investment, since it includes items like modernization and depre-

TABLE 11. FINANCING OF GOVERNMENT DEVELOPMENTAL EXPENDITURES IN INDIA

(In billions of rupees)

	1950–51, Actual			Plan Estimate, 1951–56		
	Central Govt.[1]	State Govts.[1]	Total	Central Govt.[1]	State Govts.[1]	Total
1. Public savings	0.94	0.51	1.45	3.30	4.08	7.38
From current revenue	*0.71*	*0.51*	*1.22*	*1.60*	*4.08*	*5.68*
From profits of railways	*0.23*	—	*0.23*	*1.70*	—	*1.70*
2. Private savings absorbed by Government	0.31	0.46	0.77	3.96	1.24	5.20
Loans from public	*−0.11*	*0.08*	*−0.03*	*0.36*	*0.79*	*1.15*
Small savings, etc.	*0.42*	—	*0.42*	*2.70*	—	*2.70*
Deposits, funds, and misc.	—	*0.38*	*0.38*	*0.90*	*0.45*	*1.35*
Total (1 + 2)	1.25	0.97	2.22	7.26	5.32	12.58
3. External assistance already assured				1.56	—	1.56
4. Further external assistance or additional taxation, borrowing, and deficit financing[2]				6.55	—	6.55
Total (1 through 4)				15.37	5.32	20.69

[1] Central Government includes Part C States.

[2] Of this sum, Rs 2.9 billion, representing the release of sterling balances, is earmarked in the Plan for deficit financing.

Source: Government of India, Planning Commission, *The First Five Year Plan* (New Delhi, December 1952), pp. 55 and 62.

ciation. The total investment in organized private industry is expected to be of the order of Rs 6 billion, to be financed as shown in Table 12.

Apart from the developmental expenditure of the Government and investment of organized private industry, a substantial amount of other investment must occur in the community. This investment outside the Plan covers a wide and heterogeneous group of activities: e.g., investment by small-scale or unorganized agriculture and industry; investment in residential construction, stocks of goods, or gold and other precious metals; and investment in roads, schools, etc., by local governments and private organizations. It is difficult to make any reasonable estimate of the amount of investment in this area outside the Plan.

The distinctive feature of the unorganized sector is that investment is largely undertaken by the persons that do the saving, including saving in kind, and is to a large extent induced by the availability of savings. Transfers of savings to or within the unorganized sector undoubtedly take place, but they are relatively small. Institutional arrangements for such transfers on any sizable scale are almost negligible. For this reason, any deficiency of savings in the unorganized sector will result in a prompt and equivalent reduction of investment. In the unorganized sector, the inadequacy of resources is shown by the low level of investment. In the

TABLE 12. ESTIMATED FINANCING OF INVESTMENT IN SELECTED PRIVATE INDUSTRIES IN INDIA, 1951–56

(In billions of rupees)

	Estimate
1. Private resources	3.50
Corporate savings	*2.00*
New security issues	*0.90*
Refunds of excess profits tax	*0.60*
2. Finance through government institutions	0.25
Assistance from public sector	*0.05*
Loans from Industrial Finance Corporations	*0.20*
3. Foreign investment	1.00
4. Bank credit and other sources of short-term finance	1.58
5. Adjustment for double-counting[1]	−0.20
Total	6.13

[1] Part of the foreign investment included in item 3 is expected to flow to public enterprises.

Source: Adapted from Government of India, Planning Commission, *The First Five Year Plan* (New Delhi, December 1952), p. 436.

organized private sector and in the public sector, the concept of inadequacy is that available resources are less than the planned level of investment.

Adequacy of total resources

The estimates of the funds for financing development are precisely equal to the planned level of investment. This does not, of course, indicate that real resources are or will be available for this level of investment. That must depend on the reliability of the estimates of domestic savings and foreign resources. As a secondary matter, for each sector, it must also depend on the functioning of the financial institutions that are designed to transfer savings from those who make them to those who use them. A deficiency of total resources for development will be manifested in a failure to secure finance from sources other than the excessive creation of credit.

About four fifths of investment outlays are to be met from domestic savings of Rs 27 billion to Rs 28 billion. For this estimate to be realized, the public and private savings of India must be raised from about 5 per cent of the national income in 1950–51 to about 6.75 per cent of the national income in 1955–56. Small as these ratios are in comparison with other countries, the increase in the savings ratio represents a radical change in attitude toward the use of income. Unless there is reason to believe that savings in 1950–51 were abnormally low for India—and the evidence points rather to the contrary—it is difficult to see how such an increase in savings can be achieved without extraordinary measures by Government.

A priori, it would be expected that in low income countries, the pressure to apply additional income to an increase in consumption would be so great that no significant increase in the savings ratio could be expected. Certainly, it would be unrealistic to count on as large an increase in savings as one half of the increase in per capita income. The introduction of better and more widespread facilities for saving could affect the savings ratio, but that is by nature a slow process. Alternatively, measures by Government to increase tax revenues, to compel additional savings, or to limit consumption, might bring about an increase in savings to the estimated level.

There is no indication that extraordinary measures are contemplated to assure an increase in savings on the estimated scale. The ratio of taxation to national income is not to be increased during the period of the Plan. There is no reason for expecting a decrease in nondevelopmental expenditures of Government that would result in an increase in public savings. It is possible, of course, that by appeal to patriotic sentiment,

through the provision of special securities or through better returns to savers, some increase in private saving will take place. There is a probability, however, that savings, particularly personal savings, will fall short of the estimates in the Five Year Plan.

It is expected that Rs 7.4 billion will be provided out of public savings, including the Government's share of the profits of railways. The savings from the current revenues of the Central and State Governments are estimated at nearly Rs 5.7 billion for the five years. In 1950–51, this item amounted to Rs 1.22 billion. Despite the expected increase in national income, the five-year estimate is on the high side. In 1950–51, there were some abnormal or nonrecurrent items of revenue like export duties and collection of income tax arrears; and nondevelopmental expenditure is expected to increase above the 1950–51 level. The Plan envisages, therefore, some increase in the yield of normal taxes above the base year level. Part of this increase will come with the growth in national income; but a part will have to come from new taxes or an increase in the rates of existing taxes.

Of the Rs 5.7 billion total of government savings from current revenue, the Central Government's share is only Rs 1.6 billion, against nearly Rs 4.1 billion for the State Governments. In order to achieve this target, the States must raise additional revenue of Rs 2.32 billion over the five years. So far, the progress of the States in achieving this goal has been disappointing. It seems very doubtful at this stage that the States will be able to find their share of the resources required for the Plan unless they impose new taxes in the coming years and reduce their nondevelopmental expenditures.

The increase in State revenues so far is largely accounted for by land revenue (Table 13). But a large part of this increase will have to be used for compensation of the zamindars (intermediaries) in connection with the land redistribution program. When account is taken of the fact that the States have increased nondevelopmental expenditures and developmental expenditure on schemes outside the Plan, the need for additional revenue, to meet the target of savings by the States, remains as great today as it was before the Plan came into operation.

If private savings fall short of the estimate, as there is now reason to expect, the government sector and the organized private sector will not be able to secure the finance they had counted on. The Central and the State Governments hope to absorb Rs 5.2 billion of private savings over the five years, of which Rs 1.15 billion is to consist of new loans. The Plan puts the Central Government's share in new loans at Rs 360 million and the States' share at Rs 790 million, but this division is not hard and fast. In the first two years new loans made no net contribution to financ-

ing the Plan; there was, in fact, a net outflow to the public on this account from the Central and the State Governments combined. In recent months both the Central and the State Governments have raised substantial amounts through new flotations. It is still uncertain whether or not the five-year target for new loans can be reached.

The greater part (Rs 2.7 billion) of private savings flowing to the Government is supposed to take the form of small savings and unfunded debt (excluding Treasury bills), national savings certificates, Treasury savings deposit certificates, postal savings, proceeds of State Provident Funds, etc. The present annual rate of these savings is close to the average projected for 1951–56, and this estimate should be realized. The sizable item of private savings available to the Government in the form of "deposits, funds, and miscellaneous" (Rs 1.35 billion) is a heterogeneous grouping of accounts which is counted on to yield one fourth of the private savings absorbed by the Government. From recent experience, this estimate is not likely to be reached.

The outlay of the organized sector of private industry is estimated at Rs 6.13 billion. Some of the sources of finance for this sector, such as assistance from the public sector, loans from the Industrial Finance Corporations, and refunds of excess profits tax, are reasonably assured. Corporate savings in 1950–51 were estimated to be Rs 400 million. The Plan expects the same rate per annum during 1951–56, that is, a total of Rs 2 billion. In the absence of adequate information on corporate savings during the first two years of the Plan, it is not possible to form any judgment about the target of corporate savings. As regards new issues,

TABLE 13. TAX REVENUES OF THE STATES IN INDIA

(In millions of rupees)

	1950–51	1951–52	1952–53 (Revised)	1953–54 (Budget)
Land revenue	496	480	609	675
Agricultural income tax	41	43	38	31
State excise	473	494	444	442
Stamps	222	220	222	231
Registration	38	39	37	37
Taxes on motor vehicles	85	98	110	122
General sales tax	563	545	511	547
Sales tax on motor spirit	36	45	58	68
Internal customs	87	95	67	61
Other taxes and duties	179	212	201	215
Total	2,220	2,271	2,297	2,429

Source: Government of India, Planning Commission, *Five Year Plan: Progress Report for 1951–52 and 1952–53* (New Delhi, May 1953), p. 9.

the experience of the last few years is not encouraging and it is not possible to say whether the target of Rs 900 million can be achieved. Obviously, the claims of the Government and of private industries on savings converge here, and any gain by one may be at the expense of the other.

Apart from domestic savings, foreign resources are estimated to provide Rs 8 billion for carrying out the Plan. These resources represent about 22 per cent of the total investment contemplated in the Plan. As much of these resources consist of India's foreign exchange reserves, the amount expected in foreign aid and capital is not, in fact, large. The use of releases of sterling balances to the extent of Rs 2.9 billion depends on the emergence of a balance of payments deficit to which they can be applied. In addition, there was assured foreign aid of Rs 1.56 billion at the time of the Plan. The Plan further contemplates an inflow of Rs 1 billion in private foreign investment. About Rs 650–700 million of this will come from the petroleum refineries, the International Bank loan for the Indian Iron and Steel Company, the expansion of the Indian Aluminium Company, and additional investment in the railway coach factory.

The Plan envisages Rs 2.54 billion of additional foreign assistance that is not assured. As already noted, this is a residual item in the sense that the deficiency in aggregate resources for the Five Year Plan, after allowing for domestic savings and known foreign resources, was expected to be covered by additional foreign assistance (see Table 10). Since the estimate for the Plan was made, additional foreign resources of close to Rs 350 million have already been received, and further assistance on a modest scale will accrue during the next three years. That would still leave more than Rs 2 billion of foreign assistance that is needed but not assured, even if the estimate of domestic resources should be realized. Failure to secure this sum would necessitate a reduction in investment unless additional resources could be secured at home.

Some comment is necessary on the two residual items of finance, "deficit financing" in the government sector and "bank credit and other sources of short-term finance" in the organized private sector. These represent the allocation of foreign resources or domestic savings through the instrumentality of the monetary and banking system. Given the availability of real resources, the creation of currency and deposits in an appropriate amount is the means of assuring a suitable monetary policy. Failing the availability of real resources, the creation of credit to meet the residual gap in finance must result in an excessive money supply and the generation of inflation.

Experience of the first two years

The Plan has been in operation for more than two years and the Planning Commission has put before Parliament a progress report. The experience of these two years should provide practical evidence whether adequate resources are available for investment. The operation of the Plan so far has not generated any inflationary pressures. This basic fact is consistent with three alternative explanations. It may indicate that resources will be adequate for all of the investment under the Plan and throughout the period of the Plan, or that available resources have been above the average in the first two years and may not be adequate in the last three years, or that the level of investment has been below average in the first two years and will have to be much larger in the last three years. The evidence indicates that in fact there was a lower level of investment than planned and an unusual concentration of resources in these two years. Far from indicating an adequacy of resources, the evidence suggests a shortage of resources in the next three years of the Plan.

The evidence available on developmental expenditure by the Government and in organized industries shows that investment has been lower than the planned level. In the two years 1951–53, the developmental expenditure of the Government amounted to Rs 5.8 billion, compared with a planned total of Rs 20.7 billion for the five years (Table 14). To meet the target for development in the public sector, annual outlay in the last three years will have to average 70 per cent higher than in the first two years.

TABLE 14. OUTLAYS OF THE CENTRAL AND STATE GOVERNMENTS, UNDER INDIA'S FIVE YEAR PLAN

	Central Government[1]		State Governments[1]		Total	
	Billion rupees[2]	Percentage of 5-year target	Billion rupees[2]	Percentage of 5-year target	Billion rupees[2]	Percentage of 5-year target
1951–52 (final accounts)	1.34	10.7	1.28	15.4	2.62	12.6
1952–53 (revised but not final)	1.65	13.3	1.57	18.9	3.22	15.5
Total, 1951–53	2.99	24.0	2.85	34.3	5.84	28.1
1953–54 (budget)	2.37	19.0	1.76	21.2	4.13	19.9
5-year target, 1951–56	12.41	100.0	8.28	100.0	20.69	100.0

[1] Central Government includes Part C States.
[2] From Government of India, Planning Commission, *Five Year Plan: Progress Report for 1951–52 and 1952–53* (New Delhi, May 1953), p. 18.

In the organized industries (public as well as private), investment for expansion in the first two years is tentatively estimated at Rs 600 million out of a planned total of Rs 3.27 billion for the five years. To realize the targets, investment in the last three years will have to average nearly three times that in the first two years. As regards the investment of Rs 1.5 billion for modernization and replacement, real progress seems to have been made in the iron and steel industry. Other important industries, such as jute and cotton textiles, have yet to report definite progress in meeting the investment targets of the Plan.

The first two years cannot be regarded as typical of the strain that would be placed on the economy if investment were to be accelerated in the next years in order to realize the targets of the Plan. The first two

TABLE 15. PUBLIC RESOURCES IN INDIA, 1951–54, AND ESTIMATES OF THE FIVE YEAR PLAN

(In billions of rupees)

	1951–52	1952–53 (Revised budget)	1953–54 (Budget)	1951–56 Plan
A. Savings of public authorities				
From current revenue	1.90	0.61	0.93	5.72
From railways	0.38	0.21	0.20	1.70
B. Private savings absorbed by Government.				
Loans from the public	−0.23	0.14	−0.03	1.15
Small savings and other unfunded debt	0.49	0.54	0.56	2.70
Deposits, funds, and miscellaneous	−0.49	0.08	0.29	1.31
C. Total budgetary resources (A + B)	2.05	1.58	1.95	12.58
D. Foreign aid assured or received		1.06		1.56[1]
E. Deficit financing		1.15		2.90
F. Additional foreign aid, taxation, borrowing, or deficit financing		—		3.65
G. Total government resources for developmental expenditure (C through F)		5.84		20.69

[1] Actually some Rs 1.9 billion is assured in foreign aid so far for the entire period of the Plan. This will permit a corresponding reduction in item F, including "additional foreign aid".

Source: Adapted from Government of India, Planning Commission, *Five Year Plan: Progress Report for 1951–52 and 1952–53* (New Delhi, May 1953), pp. 4 and 7. Slight differences between certain items in this table and comparable items in Table 11 are due to revisions since publication of *The First Five Year Plan.*

years have also been unusual in the amount of resources that were available for carrying out the Plan. Because of large extraordinary or nonrecurrent revenue in the form of export duties and collection of income tax arrears, government savings were unusually large in 1951–52. In that year, the savings of all government units (Central and State Governments) through the budget amounted to Rs 1.9 billion, one third of the total planned for the five-year period (Table 15). The Government also had available during the two years the resources represented by the U. S. Wheat Loan.

There is reason to believe that domestic savings cannot meet the targets set for them, unless extraordinary measures are taken. Public resources for the Five Year Plan for 1951 to 1954 (the figure for 1953–54 being based on the budget estimates) amount to Rs 5.6 billion out of a five-year total of Rs 12.6 billion. To achieve this target, public resources in each of the last two years of the Plan will have to be increased by an average of 80 per cent above the level of 1953–54. While detailed data are not available on the resources of the private organized sector, the experience of the past two years indicates that investment is lagging and this must indicate that resources are falling short of the estimates. The experience of the first two years shows that, if the Five Year Plan is to be carried out, there must be a rapid expansion of investment, and, if this is not to lead to inflation, there is need for substantially more resources than now appear to be available.

The analysis above indicates that resources will not be available for carrying out the investment contemplated under the Five Year Plan. Domestic savings, private and public, cannot be expected to reach the estimates. A large part of the foreign resources required for the Five Year Plan is not assured. Active measures will have to be taken to increase the total resources available to carry out the Plan. In the absence of additional resources from domestic and foreign sources, the planned level of investment will result in inflation. The alternative of reducing the contemplated level of investment may result in bringing the volume of investment below the critical level which is essential for giving forward momentum to the economy of India. The succeeding sections consider alternative means through which the necessary resources might be secured.

Bank Credit and Resources

The chronic shortage of real resources even for a modest development program, which is characteristic of underdeveloped countries, has led many businessmen and economists to advocate the expansion of bank credit to finance development. Some have argued that, with the wide-

spread underemployment of labor, no great impetus to inflation would result from the expansion of bank credit for investment to increase production. Others have recognized that such an expansion of bank credit would be inflationary, but argue that the harm done by inflation would be less than the harm done by continued economic stagnation.

Underemployment, credit, and inflation

The view that the expansion of bank credit to finance development is not inflationary starts from the assumption that in underdeveloped countries a considerable part of the labor force is employed in low output work in agriculture. The contribution of such marginal workers to output may be exceptionally small in India because of the limited supply of land. The argument is that the transfer of such workers from agriculture to the construction of dams, roads, and other investments will result in little or no reduction in the output of food. And in time, the investment which is undertaken with their labor will increase the output of food and other consumer goods. The conclusion is then reached that for these reasons the expansion of bank credit to finance development would not be inflationary.

There is sufficient resemblance between this assumed case and reality to regard it as a satisfactory basis for analyzing the inflationary effect of the expansion of bank credit to finance development. If labor is taken out of agriculture and put to work on investment, the workers must be paid wages at a level not less than they earned in agriculture. If agricultural output is not reduced at all by the transfer of labor, then agricultural income will be the same as before. Thus aggregate incomes will be increased by the amount of the investment. With an increase in aggregate incomes, the expenditure on consumption will increase. By definition, there is no present increase in output of consumer goods, and prices will tend to rise.

The fact that investment results in increased production in the future is no assurance that the creation of bank credit to finance development will not give rise to inflation now. The argument for this policy is based on a mistaken analogy between underemployment in underdeveloped countries and unemployment in industrial countries. In an underdeveloped country, the creation of bank credit to finance development will result in some increase in production of consumer goods in the future, but not sufficient to meet the increase in demand that will be generated currently. In an industrial country, the creation of bank credit to finance investment will result in a sufficient increase in production of consumer goods, if there is unemployment, to meet the demand that will be generated currently. Underemployment in an underdeveloped country does

not indicate that other resources are available for a prompt expansion of the production of consumer goods. Unemployment in an industrial country does indicate that other resources are available for a prompt expansion of the production of consumer goods.

The question arises whether, at a later stage, when the investment results in a larger output of consumer goods, the same level of investment will also be inflationary. Suppose that after an interval of two years the effect of the new investment is to increase agricultural production *annually* by an amount equivalent to the additional investment financed by bank credit. Even under such circumstances, the maintenance of the same level of investment would generate inflation. The increase in output accrues as income to some part of the economy except as it results in additional tax revenue or is set aside as reserve for depreciation. While some of the increase in income will be saved, most of it will be spent. Thus, the larger part of the increased output is matched by increased expenditure. Only that part which remains as savings, taxes, or depreciation reserve is available to finance the new, higher level of investment.

Money supply and economic growth

It must not be assumed that, because the creation of bank credit to finance development may lead to inflation, there is no positive or constructive role for an appropriate credit policy. On the contrary, because there is a deficiency of real resources, credit policy must be alert to ensure that a deficiency of money as distinguished from a deficiency of real resources does not further impede development. And it must be alert to ensure that whatever credit is made available through the banking system has the greatest possible effect in increasing production.

As the economy of India develops, a gradual increase in the money supply will be needed. The increase in the money supply that will be necessary is likely to be not less than in proportion to the increase in production, and it may have to be somewhat more, if industry, commerce, and even agricultural production for the market gain in importance relative to agricultural production for the village community. Such an increase in the money supply is clearly not inflationary; and a smaller increase may prove to be inadequate for the needs of a stable economy.

There are only two ways in which the money supply can be increased: by the acquisition of foreign exchange assets and by the creation of credit. Under the traditional monetary systems, growth in the money supply was invariably linked with accumulation of gold or foreign exchange as a monetary reserve. Even with a more flexible monetary system, there is great merit in the basic principle that some addition to

monetary reserves should accompany growth in the money supply. This is so because increased production is likely to be associated with an expansion of foreign trade and larger fluctuations in foreign exchange receipts and payments. That part of the growth in the money supply which is not matched by the accumulation of foreign exchange assets must arise from the creation of credit.

In India, it would not be desirable in the next few years to link the growth of the money supply with the accumulation of additional reserves. For a time, there will be a drawing down of sterling balances. At some stage in the future, the reserves will have been brought into appropriate relation with India's needs. Thereafter, it may become necessary to begin a gradual process of building up reserves to keep pace with the expansion of India's international trade and payments. The time when such a change in policy will be necessary is beyond the period covered by the Five Year Plan. For the present development program, growth in the money supply will not be accompanied by any increase in monetary reserves; on the contrary, it will have to be brought about in the face of a decrease in monetary reserves.

The provision of coins, including one rupee notes, is undertaken by the Government of India through the Ministry of Finance. The supply of coins and one-rupee notes is determined by the needs of the public and the limitations established by law. For practical purposes, this is a negligible part of the broader means for dealing with the money supply. The effective force in the growth of the money supply is the action of the Reserve Bank of India in creating central bank credit and of the commercial banks in creating commercial bank credit. Changes in the cash balances of the Central Government do, of course, act to increase or decrease the supply of money held by the public, if not offset by other action. In the long run, however, there is little scope for significant changes in the cash balances of the Central Government, although at some times the Government may accumulate large balances and at other times it may draw them down rapidly.

The increase in the amount of money held by the public represents savings matched by real resources that go into investment. Where growth in the money supply is the result of the accumulation of foreign exchange, the investment is represented by the foreign exchange. Where growth in the money supply is the result of the creation of bank credit, the investment is represented by the projects financed by bank credit. The creation of bank credit within the limits of an appropriate money supply makes it possible for the public to hold enough of its savings in the form of money to assure price stability in a growing economy. The allocation

of the bank credit among different borrowers affects the direction of investment arising from these savings.

Deficit financing without inflation

The Government of India is undertaking a considerable part of the investment for development. It is clear that current revenues and the proceeds of loans from the public, including commercial banks, will not provide sufficient funds to meet the requirements of the Government for its part of the financing of the Five Year Plan. The Government will, therefore, find it necessary to draw down its cash balances and borrow from the Reserve Bank of India. The financing of the uncovered deficit in this way is called "deficit financing" in India; and that is the sense in which this term is used in this report.

There has been a good deal of discussion of the significance of deficit financing in relation to the Five Year Plan. This discussion has ranged between two extreme views. On the one hand, there are some people who regard deficit financing as essential for the purposes of the Plan and a healthy means of stimulating enterprise. On the other hand, there are those who regard any deficit financing as inflationary and a serious threat to the stability of the economy. Deficit financing which is used to secure an appropriate money supply and to direct real resources to the Government for its investment is clearly essential to the success of the Plan. If deficit financing is undertaken without regard to its effect on the money supply and the availability of resources, it will inevitably lead to inflation and hamper the achievement of the Plan. Whether deficit financing is desirable or not depends fundamentally on the amount, the environment in which it is undertaken, and the policies that go along with it.

The first consideration in any policy involving deficit financing is whether there are inflationary pressures. If the economy is inflated, then deficit financing can only add to the problem. That was the situation in India some time ago and the public quite properly regarded the deficit financing of earlier years as a factor in this inflation. At present, however, available indices and the judgment of economists, businessmen, and bankers indicate that there are no significant inflationary pressures in the economy. Under such circumstances there need be no objection to deficit financing, provided the amount of such financing is limited to what is necessary for a sound credit policy, and provided other measures are taken to avoid excessive expansion of the money supply.

There is no formula by which one may determine the amount of deficit financing that may properly be undertaken in the near future. As in most matters involving credit policy, this is ultimately a matter of

judgment. It may be assumed that the supply of money is now approximately suited to India's needs. A further contraction in the money supply is not called for, unless there is a very sharp change in the payments position of India. The carrying out of the Five Year Plan will result in the drawing down of sterling balances. The process by which monetary reserves are used involves a diminution in the money supply equal to the decline in reserves, unless other measures are taken to offset it. As a minimum, therefore, the use of cash balances by the Government of India, and the creation of Reserve Bank credit and commercial bank credit, for the public and the Government, should be undertaken equivalent to the further use of sterling reserves.[4]

It is important to recognize the relation between deficit financing (or other credit creation) equivalent to the use of sterling reserves and the availability of real resources for the Five Year Plan. The use of sterling balances is already included in the estimate of real resources available for the Plan. Deficit financing or other credit creation to restore the money supply does not increase the amount of real resources; it merely determines by whom the real resources should be used. To the extent that the money supply is restored by deficit financing or by government borrowing from the commercial banks, the real resources equivalent to the use of sterling balances are made available for the Government. To the extent that the money supply is restored by the borrowing of business from the commercial banks, the real resources equivalent to the use of sterling balances are made available for the private sector.

The expansion of the money supply, as distinguished from its restoration, does involve savings in the form of cash balances and, therefore, represents an increment of real resources for investment. So long as the expansion of the money supply is no more than enough to finance the larger volume of production, consumption, and investment at stable prices, it is not only not inflationary, but is essential to the proper functioning of the economy. To the extent that the expansion of the money supply takes place through deficit financing and by government borrowing from the commercial banks, it makes available to the Government the resources represented by such saving. To the extent that the expan-

[4] Creation of credit equivalent to the reduction of reserves attributable to a balance of payments deficit on either current or capital account is not inflationary and, indeed, is necessary to restore the money supply and thereby prevent deflation in a country in which the money supply is properly related to economic policy and the balance of payments deficit is an appropriate deficit that can be financed. In the case of a current account deficit, the credit expansion is necessary to match the additional supply of goods and services available from abroad and enables home investment to exceed domestic savings. In the case of a deficit on capital account, the credit expansion obviates the need to use domestic savings to match the capital outflow and permits the whole of domestic savings to be used for home investment.

sion of the money supply takes place through business borrowing from the commercial banks, it makes available to the private sector the resources represented by such saving.

The Five Year Plan explicitly takes account of the use of sterling reserves and includes the use of reserves as part of the foreign resources for the Plan. The Plan does not explicitly take account of the savings represented by expansion of the money supply beyond its present level. The assumption is implicitly made that such resources will be allocated through bank loans to the private sector and that these loans will be used to finance inventory accumulations or other investment. It should be possible through credit policy to see that these resources are not directed to less productive forms of investment, but become available in larger part for productive investment within the scope of the Plan or complementary to it.

Credit policy with deficit financing

Clearly, some deficit financing is consistent with a sound credit policy designed to avoid inflation and to facilitate economic development with stability. Clearly, too, excessive deficit financing is not consistent with a sound credit policy and can lead to inflation even if it is for the purpose of undertaking development. Deficit financing is but one aspect of credit policy, and it is only on the whole range of credit policy that a judgment can be made. The practical problem for the monetary authorities is to determine how much is proper and how much is excessive deficit financing within the framework of a sound credit policy.

One magnitude of which rough estimates can be made is the aggregate amount of credit creation that may reasonably be undertaken without risking a serious inflation. The money supply at the end of March 1953 was Rs 18.5 billion.[5] Disregarding adventitious factors, it is probable that, if the economy develops as foreseen by the Five Year Plan, an appropriate money supply for India by March 1956 (the close of the Plan) would be close to Rs 19.5 billion. If the drawing down of sterling balances in this three-year period should amount to Rs 2 billion, it would be possible to reduce the cash balances of the Government of India and increase Reserve Bank and commercial bank credit by a total of close to Rs 3 billion.

It should be pointed out that such an estimate of the total amount of credit that could be created without risking a serious inflation cannot be set up as a target in the Five Year Plan. Rather, it should be thought of as a guide to be modified to suit the actual developments in the In-

[5] Series reported in International Monetary Fund, *International Financial Statistics*.

dian economy which are the true determinants of the amount of credit that can be created to bring about an appropriate money supply. If output in India grows more than is foreseen by the Plan, there will be a possibility of a larger expansion of credit. On the other hand, if output grows less than is foreseen by the Plan, if the actual use of sterling falls short of the agreed releases, or if the payments position deteriorates, the creation of credit cannot safely be allowed to reach this estimated figure.

Whatever the appropriate amount of credit creation may in practice prove to be, not all of it can be set aside for deficit financing. Even if credit policy could assure that such an amount of deficit financing did not give rise to an excessive expansion of the money supply, it would not be desirable to have all of the resources arising from the use of sterling reserves and savings in the form of cash balances set aside for the public sector. Some of these resources will have to be made available for credit from the banking system to private enterprise if investment is to be undertaken to increase production in agriculture and industry. Apart from this, the banking system would almost certainly expand credit excessively if deficit financing were undertaken to the full amount of the decrease in the sterling reserves and the need of the public for additional cash balances.

Suppose the Government were to draw down its cash balances and the Reserve Bank were to acquire Treasury securities to a total of nearly Rs 3 billion over three years. This sum would enter into the money supply. To the extent that the deficit financing restores the money supply decreased by the use of sterling reserves, it would not increase the capacity of the banking system to expand credit. Its only effect would be to avoid a contraction of credit that might otherwise be forced on the commercial banks. To the extent that the deficit financing represents a net increase in the money supply, it would make possible a further expansion of bank credit. Part of the increase in the money supply would remain in the hands of the public as currency; but part of it would come to the banks as an increase in deposits. With increased reserves they could expand their loans, unless other action were taken to offset this. The aggregate expansion of credit, through deficit financing and the commercial banks, would be more than the economy requires for financing the increased output at stable prices. Inflationary pressures would then emerge.

It is not possible to say precisely how much deficit financing can be undertaken without risking inflation. As a minimum, it would be as much as the drawing down of sterling reserves. Beyond that, an uncertain fraction, perhaps about one half, of the net increase in the money supply could be used for deficit financing without serious risk of inflation. This

proportion is high because a large part of the money supply of India consists of bank notes, so that the expansibility of bank credit on the basis of additional reserves is limited. Even if deficit financing could be safely undertaken to an amount equal to the drawing down of the sterling reserves plus some fraction of the net increase in the money supply, it would not follow that this is a desirable policy.

Deficit financing should be integrated with general credit policy. This means that deficit financing, operating within the proper money supply, must not deprive the private sector of resources for which its need may be financially no less urgent and economically no less justified than that of the Government. With uncertainty about how far the money supply can safely expand, any decision on the amount of deficit financing would have to be provisional. The Ministry of Finance should proceed cautiously, undertaking an amount of deficit financing that would appear warranted in the light of circumstances. If the amount proves not to be excessive, borrowing from the Reserve Bank can be increased and credit policy can be slightly eased. On the other hand, if the amount proves to be excessive, borrowing from the Reserve Bank can be decreased and credit policy can be slightly tightened.

The need for effective credit policy will be greater in the future than in the recent past. The economy of India must be expected to be more dynamic with the increase in investment contemplated in the Five Year Plan; and the risks that arise from credit policy will be greater in a country in which resources are inadequate for development. The Reserve Bank of India has been successful with its flexible credit policy, and this must now be shaped to deal with new problems. It would be desirable to make the banking system even more responsive to the policies initiated by the Reserve Bank. The risks of an excessive expansion of credit would be reduced and the flexibility of credit policy would be increased if the commercial banks were to resume holding significant amounts of Treasury bills in their portfolios. The Reserve Bank is thoroughly familiar with the technical measures for encouraging such use of bank funds.

Credit policy for development

The carrying out of the Five Year Plan requires the mobilization of the real resources available for investment. This does not mean that all investment called for by the Plan is to be regarded as having priority over all investment outside the Plan. It does mean, however, that investment that has a great effect in increasing agricultural and industrial productivity should be encouraged at the expense of investment that is profitable but has small or negligible effect in increasing productivity. Greater investment in the private sector, especially in moderate-sized

industries and agriculture, may be exceedingly useful for developing production in India. Such producers have no access to the capital market and their need for additional funds can be met only through bank credit.

There are undoubtedly great difficulties in establishing a workable system of agricultural credit in India through the existing banking system. In part this arises from the absence of banking offices in rural sectors, in part from the inability of agricultural borrowers to meet the credit requirements of banks. The Government and the Reserve Bank of India are now studying the problem of agricultural credit and a practical solution will undoubtedly be found. The difficulties regarding adequate credit for industrial purposes are of a different order. They arise almost entirely from the traditional attitudes of the banking system. Industrial enterprises can secure adequate credit facilities for short-period and seasonal needs, particularly for financing purchases of materials, processing of goods, and sale of finished products. It is only in connection with the acquisition of machinery and related facilities that adequate credit is not available to industry.

The commercial banking system of India has a conservative tradition based on the concept that deposit banks should remain exceptionally liquid and their lending operations confined primarily to short-period credit for commercial purposes. The maintenance of high banking standards is important to a sound economy; and the Reserve Bank should be encouraged in its effort to raise banking standards in India. A well-balanced portfolio of loans, including a large proportion of short maturities, is evidence of high banking standards. An excessive proportion of short-period loans for commercial purposes may merely indicate that the banking system is not providing loans to industry for the modernization and expansion of the economy.

The purpose of having short-dated, liquid loans, as distinguished from sound loans with longer maturities, is to enable banks to contract credit if this should become necessary. For an individual bank, such a contraction of credit might become necessary if it loses deposits and must meet large cash withdrawals or adverse clearings with other banks. For the banking system as a whole, a contraction of credit may be necessary if there is a balance of payments deficit involving a decline in reserves that is not matched by an expansion of Reserve Bank credit; or if there is a contraction of Reserve Bank credit to avoid a balance of payments deficit or for other reasons.

When the cash reserves of banks are as large as in India, even a moderate proportion of their loans in short-dated maturities provides ample liquidity for all practical purposes. A higher ratio of short-dated loans can be justified on other grounds—that such loans are safer or that they

are eligible for rediscount at the Reserve Bank. This is a matter of banking practice, not of credit policy. In India the preference for short-dated commercial loans is based on a tradition that emphasizes the need for liquidity by the banking system. As a consequence, the bulk of the available bank credit goes to financing the holding of goods; and very little goes to financing the expansion of production. The need for liquidity is, of course, greater for the exchange banks, which are more engaged in financing foreign trade and whose deposits may fluctuate more sharply with changes in the balance of payments of India.

Although banks give preference to commercial loans, in practice some of their lending does finance industrial expansion. This is obviously so in the case of loans for periods of two or three years or longer for acquiring equipment; and it is so in the case of short-period loans made nominally for holding inventories. Such loans enable borrowers to use more of their own resources for acquiring equipment. As the loans are often renewed at maturity, they are actually two-year or three-year loans rather than three-month or six-month loans. Such loans, when made to good borrowers, are consistent with high banking standards. They would be equally good loans if made for two or three years and specifically for the purpose of acquiring equipment.

The institutional arrangements for financing private industrial enterprise in India are not adequate. This situation is common to nearly all underdeveloped countries. The reason is that the limited industrial sector cannot provide enough savings out of business profits to finance industrial expansion even on a modest scale. At the same time, the capital markets are not designed to finance the expansion of small and moderate-sized businesses. In the United States, the commercial banks regard two-year and three-year loans for equipment as consistent with good banking practice, provided the aggregate of such loans is not excessive and the borrowers are good credit risks. This is a problem of adjusting banking standards to the needs and traditions of the country. It should be studied by the Reserve Bank of India.

The need to make more adequate provision for industrial credit has been recognized by the establishment of the Industrial Finance Corporation by the Central Government and similar institutions by some of the States. The need may not be fully met by these institutions for two reasons—they may deal primarily with larger industrial firms and their resources may not be adequate. These difficulties could be considerably alleviated if the Industrial Finance Corporation could collaborate with the banks in making industrial loans. There are many ways in which this collaboration could take place. The banks could participate with the Industrial Finance Corporation in loans to their own clients, with

or without its guaranty. The banks could take the early maturities of loans and the Industrial Finance Corporation could take the later maturities. This is a matter that should be studied by the Reserve Bank of India, the Industrial Finance Corporation, and representatives of the banking system.

Price Controls, Rationing, and Allocations

Where credit policy is used actively to provide the country with no more than the appropriate money supply that can finance a growing output at stable prices, there can be no inflation arising from deficit financing and credit creation by the banks. At the same time, such a credit policy does not increase the real resources available for development. It merely allocates the real resources represented by the drawing down of exchange reserves and the savings of the public in the form of cash balances. Credit policy could be used to expand the money supply beyond the appropriate amount. Under such circumstances, additional real resources would become available for development, if the response of the economy to the inflation were not of a sort to diminish the availability of resources arising in other ways.

The inflation resulting from the excessive creation of credit transfers real income to profit receivers. It would be a mistake to assume, however, that all of the inflation profits become available for development. The savings of other groups in the community are reduced in an attempt to protect the level of consumption. The consumption of profit receivers is also increased as their real incomes rise. Thus, only a fraction, perhaps only one half or one third, of the inflation profits emerges as an addition of real resources for development. And even this is accomplished only at the cost of severe disruption in the economy and grave injustice to large numbers of the people. It has been argued in India, as elsewhere, that the disruption and the injustice caused by inflation can be avoided by controls, while credit creation is used to secure real resources for development.

Controls and real resources

It should be made clear what controls can and cannot do under circumstances where credit has been expanded excessively because real resources for development are inadequate. As resources cannot be transferred to investment without taking them away from consumption, there must be some reduction in consumption below the scale that would otherwise prevail at the new level of income. No system of controls can avoid that. What controls can accomplish, if they are successful, is to prevent a

sharp rise in the real incomes of profit receivers and a sharp fall in the real incomes of other groups in the community. And controls can prevent, if they are successful, the concentration of the ownership of the newly saved wealth in the hands of the profit receivers instead of the consumers whose consumption is reduced to provide real resources for development.

The inflationary pressures arise from the excessive demand which cannot be met by output. The rise in prices is the response to the excessive demand, and the effect of the higher prices is to restrict the demand to the available output. Although the rise of prices is a symptom and not the cause of inflation, it is the mechanism by which the transfers of income take place. If prices could be prevented from rising, the public would be unable to spend as much of its income as it would wish. The unspent part of the income would remain as the savings of consumers; it would not be dissipated in bidding up prices and transferring real income to profit receivers.

Price controls in one form or another were used in practically all countries during and immediately after World War II. Their effectiveness varied from country to country, and everywhere they were much less effective in holding down prices in the later than in the earlier years. For example, in the United Kingdom, the cost of living rose by nearly 15 per cent between 1941 and 1945; it rose by more than 20 per cent between 1945 and 1949. Wholesale prices of all goods rose by 10 per cent between 1941 and 1945; they rose by 40 per cent between 1945 and 1949. Over the whole period, from the beginning of the war to the end of 1949, the rise in prices was larger in the European countries that maintained price controls throughout these years than in the United States and Canada where the price controls were abandoned about one year after the war. Obviously, the important factor was that inflationary pressures were not as great in the North American countries as in Europe.

If prices are successfully controlled, the supply of consumer goods cannot satisfy the demand at prevailing prices. If the excess of demand is moderate, there may be no great harm in permitting consumption to be reduced haphazardly by the exclusion of those buyers who come when supply is exhausted. Where the excess of demand is considerable, however, great injustice would be done by this procedure. To assure a tolerably equitable distribution of the available supply of consumption goods it would be necessary to resort to rationing. As shortages would also appear in the supply of production goods, allocations to business firms would be equally necessary. It should be pointed out that the problem of allocation is far more complex than consumer rationing. Fairly equal access for all consumers to the supplies of scarce goods is socially just and administratively simple. No such rule can be applied to producers

competing for limited materials and equipment to produce an almost infinite variety of goods.

Price controls, rationing, and allocations involve significant real costs of their own. A comprehensive system requires a large and elaborate government organization for its administration. Where trained people are scarce, as in India, the necessary staff can be assembled only at the expense of handicapping other government or private activities. Furthermore, the efforts required to ensure compliance by businessmen and consumers are costly and time-consuming. Experience in many countries indicates that, even with a well-organized and efficient administration, it may prove impossible to enforce the controls in a reasonably effective and equitable manner. The problems increase with the severity and duration of the controls. If the public loses sympathy with the policy and attempts to evade the controls on a large scale, a breakdown in their administration becomes almost inevitable. Since incompletely enforced controls are both unjust and ineffective, these hazards cannot be lightly dismissed.

It should be emphasized again that price controls, rationing, and allocations do not obviate the need to sacrifice consumption in order to secure real resources for development. They serve, rather, as a method of apportioning the compulsory reduction in consumption more or less equitably throughout the community. If successful, the controls would prevent the injustice inherent in the redistribution of income originating in a rise in prices. The creation of credit would provide borrowers with the means of securing real resources; the corresponding savings would be accumulated by those whose consumption is curtailed. The accumulation of such savings is a partial offset to the sacrifice entailed in restrict ing consumption.

Broadening area of controls

The philosophy underlying controls is that a rise in prices would be followed by a demand for a rise in wages in order to restore the level of consumption, while stable prices with controls would be accepted without insisting on an unrestricted level of consumption. The key element in this philosophy is the necessity of avoiding a rise in the cost of living. Some of the advocates of the view that inflation can be suppressed in this way seem to believe that price controls and rationing will be necessary only for food grains, cloth, and perhaps a few other goods of special importance. The experience with controls in most countries, however, shows that in order to assure the effectiveness of the basic controls it becomes necessary to extend the regulatory system more and more widely.

Effective price controls and rationing of necessities leave the public free to try to buy other things with a part of the income that otherwise would be spent for necessities. This spill-over of purchasing power, if not checked, causes prices of other goods to rise, makes their production more profitable, and induces producers to shift production from necessities to nonnecessities. Producers of controlled goods cannot afford to pay as much as other producers for scarce materials or labor. To stop this diversion it is necessary to put price ceilings on more and more commodities, and attempt to check the production of nonessentials by limitation orders, allocation of materials, and the like. Thus the network of controls becomes very wide even though the original purpose may have been only to assure an equitable distribution of necessities.

If there are any parts of the economy in which there are enough unused resources to permit an increase in production without diverting labor, materials, or equipment from other activities, a spill-over of spending into these areas will be harmless and even desirable. Although there may be some possibilities of this nature, especially as regards services, they cannot be of great importance in India.

In general, controls must be operated in an environment of scarcity. Where real incomes are low, the demand for the particular types of consumption on which income would be spent is likely to be very inelastic. There is thus extraordinary pressure to offer illegal prices for supplies outside the official ration, and these higher prices become an inducement to divert supplies from official channels into black markets. It becomes necessary to extend controls over supply as well as demand.

As controls continue in force and become broader in coverage they make for inflexibility in cost-price relations. For example, the prices of industrial raw materials, if rigidly controlled, cease to reflect the influence of relative scarcity or abundance. The process of development always requires important shifts in the use of economic resources. One of the functions of the price system is to facilitate this shift by making the new uses comparatively more attractive than the old—a simple case of a functional price adjustment. The most skillful administration cannot hope to anticipate all these shifts and to achieve by regulation a close approximation to the operation of a free price system. The usual course is to attempt to hold prices rigidly, making changes only as they become obviously inescapable.

Price controls may lead to wasteful use of materials. For example, steel, being in short supply, is subjected to price control. By keeping down the price of steel, the community foregoes the opportunity of employing a powerful incentive for careful use of the material. At the controlled price it will become necessary to allocate steel, just as rationing

must accompany price control for basic foods. If the price of steel were allowed to rise, every businessman would be given an economic inducement to shift to another material of which the relative supply is greater than for steel. The pattern of relative prices of raw materials is a powerful force to induce successive substitutions of less expensive materials which are more plentiful for more expensive materials which are scarcer.

Controls also result in a domestic cost-price structure that is out of line with world prices and production costs. Imports and exports, therefore, become less responsive to changes in the outside world, and greater reliance must be placed on import and export controls and exchange restrictions. These problems are familiar ones in India and need not be elaborated. It is only necessary to mention that if internal prices of grain, for example, are kept below the world level it will be necessary to restrict exports and to subsidize imports. If, to take a different example, the price of raw cotton is held down at home while the price of commercial fertilizer is equal to the world price, Indian growers will have less incentive to apply fertilizer than will growers in other countries, and India's relative output is likely to suffer.

Effects on production and supply

The establishment of controls to deal with excessive demand requires comprehensive regulation to restrict consumption and use of goods of all kinds and to assure the flow of supplies to those authorized to buy such goods in specified amounts at regulated prices. In a country like India, large in area, where production is undertaken by innumerable small producing units, with small incomes, and with supplies of the most essential goods barely adequate for needs under ordinary conditions, such comprehensive regulation presents a formidable administrative problem. These difficulties are certain to be enhanced if the controls are retained for an extended period. For after a time, controls affect the incentive to produce and the willingness of producers to supply output for controlled markets.

Where production is organized on a price-cost basis, the ability of producers to maintain and expand output depends upon their receiving a remunerative price. The complexity of the pricing process compels the authorities to depend primarily on the maintenance of the price relationships existing at the time the controls are imposed. As these prices are not all equally remunerative, there is a tendency for producers to concentrate output on those goods whose price-cost relationship is most favorable. These are likely to be, although not necessarily, the higher-priced goods of each type. To assure low income consumers a proper

proportion of the output, it becomes necessary to regulate the types of goods produced, as under the utility goods schemes in various countries.

An effective system of price controls inevitably requires the control of costs, including wages, materials, and equipment. Where costs cannot be controlled, or cannot be prevented from rising even with controls, there will be a need for repeated adjustment of prices to assure a proper relationship with costs. As costing necessarily lacks precision, particularly when output cannot be maintained at levels for which capacity is installed, there is great risk that the proper relationship of price to cost will not be established. Business firms may be induced to reduce or to limit output because regulated prices are regarded as too low to cover costs, including reasonable profits. Acute shortages of particular goods may develop for this reason.

Even if prices and production are successfully controlled, the restrictions on consumption may affect the willingness to work or to sell output. Restrictions on consumption provide resources by preventing the public from spending a part of its income. The resulting forced savings, by definition, appeal less to the income recipients than the goods they would buy if they were allowed to do so. If controls continue, the accumulation of money which cannot be spent will in time become less and less attractive. Workers may not be motivated to put in extra effort to earn money to add to unwanted savings. Cultivators will almost certainly prefer to consume more of their food grains if they are forced to save money that they would prefer to spend or if they are able to spend money only for goods that appeal to them less than more food.

The principle is the obvious one that income encourages work because it can be used to buy goods. For a time, people may pile up money claims which they confidently expect to be able to redeem in the near future. But as rationing persists, the motivating power of unspendable money begins to weaken. That is why absenteeism becomes a serious problem in countries in which consumption is rigidly restricted by rationing, and why the most thoroughly controlled economies are ultimately compelled to devise consumption incentives to maintain work standards.

Quite apart from the discouraging effect on production, comprehensive controls are likely to hamper the flow of supplies. Because goods have a premium over money, consumers are induced to buy goods whenever they can get them and to hoard goods in preference to holding money. This is the familiar experience that people will take up a ration in full even when it is more than they would buy under free conditions. For businessmen, inventories in all stages of production tend to be held in larger amounts than necessary. As prices always creep up, and may ultimately burst upward even with the best system of price controls, specu-

lation in inventories is certain to prove profitable. That is why inventory control becomes a common feature of every comprehensive system of price fixing, rationing, and allocations.

In agriculture and in small industrial units, particularly cottage industries, the difficulty of securing goods induces producers to circumvent the restrictions by marketing their output outside the usual commercial channels. In small, relatively self-sufficient communities, this can be done by trading agricultural products for cloth and other consumer goods. For larger producers and for higher income consumers, black markets with their higher prices and their availability of supplies outside the ration become important alternatives to the fixed-price, rationed market. In time, such markets acquire a tinge of respectability and even legality as parallel markets or free markets.

If controls are successful in preventing an active inflation, their incentive effects and welfare implications, with the passing of time, come closer and closer to those of an especially severe form of taxation. Comprehensive rationing in practice comes to resemble a tax imposed at extremely high rates on all money income in excess of that required to buy the rations at controlled prices. An individual cannot hope to increase his family's present consumption of rationed goods to any significant extent by working harder or bringing more produce to the market. Of course, it would be possible to relate the size of the ration to the amount of work done or the quantity of agricultural products marketed, but this would conflict with the egalitarian philosophy which is usually urged as the justification of rationing. In contrast, the ordinary tax system, which allows some increase in consumption with a larger money income, may actually impel the worker to try to earn more or the farmer to sell a larger part of his crop. When the people begin to respond to these implications of rationing—and they will not be long in doing so—its psychological and political advantages over outright taxation also tend to disappear.

Controls and inflation

Any general expectation that prices can be kept from rising by any system of controls, however comprehensive, when there are persistent inflationary pressures, is certain to be disappointed. In one form or another these pressures gradually act on prices. No country that has had extensive experience with controls has been able to avoid at least a gradual rise in prices. That has been the experience of India in the war and postwar periods; it has been the experience of countries more plentifully supplied with goods and in which the administrative difficulties were far less formidable than they would be in India. The most success-

ful experience with wartime price controls involved a wartime rise in the cost of living of about 20 per cent (somewhat less for Canada, somewhat more for Australia). This was for high income countries which are normally very large exporters of foodstuffs. India could not hope to do as well.

Few people would argue that controls should be expected to do more than slow down the rate at which prices rise in response to inflationary pressures. Even a modest rise of 5 per cent per annum in prices—and that would indicate very successful use of controls—would, after a few years, bring considerable distortion in the Indian economy and result in grave injustice to large numbers of people. After eight years, covering the completion of the present Plan and another Five Year Plan, the cost of living would be nearly 50 per cent higher than at present. To superimpose such a rise in prices on the large rise that took place between 1940 and 1950 would be to compound the injury that has already been suffered by many people whose incomes cannot respond to inflation. Nor is there any way of making certain, through the use of controls, that the rise in prices will not be considerably greater than 5 per cent per annum.

The task of development with which the people of India are confronted is not one of providing an extraordinary amount of real resources for a relatively short period of time. Development requires a larger flow of resources into investment for a generation or more if India is to escape from poverty and stagnation. The people cannot be expected to pile up forced savings which they will hold in more or less liquid form, but for which there can be no use in consumption over so long a period. In one way or another these savings in the form of money or money claims, in excess of what people wish to hold in preference to current consumption, will have to be removed if the economy is to continue to function efficiently.

There are only two ways in which this can be done. One would be to allow the forced savings gradually to be used for consumption expenditure. As the output of consumer goods in the future will at best be only enough to meet expenditure out of current income, this will involve activating the latent inflation represented by these accumulated savings. Even if controls are continued indefinitely, these savings, as they rise higher and higher, will at last break through the controls, and the money savings will be dissipated in open inflation. In practically no country could the public be induced to continue to hold the unwanted wartime savings resulting from price control and rationing. In the end, by allowing prices to rise, the savings gradually disappeared, until they no longer exerted pressure on the economy.

The other way to remove the unwanted savings that impede the operation of the economy is to confiscate them through a monetary "reform". Even in the most thoroughly controlled economies of Eastern Europe, it was impossible to make the price and rationing systems work under the pressure of these piled-up and unusable savings. That is why these countries have had to resort to monetary reforms which wiped out a large part of past savings in the form of currency, deposits, and even government bonds. The resentment created by such reforms, in which the Government confiscates the savings accumulated by consumers as a result of restrictions imposed on their consumption, is even greater than that caused by inflation.

A system of controls that is terminated by a burst of inflation or by confiscation of savings cannot be regarded as an acceptable means of securing resources for development in a democratic country in which the Government is concerned with the well-being of the people. Either course means that the promises implicit in rationing would then turn out to be equivalent to a form of taxation in practice as well as in theory. Moral questions aside, a government should recognize that either open inflation or monetary reform weakens the urge to accumulate money savings in the future and thereby complicates a financial program relying on either voluntary or forced saving.

Price controls and rationing in conjunction with credit expansion do not offer a solution of the problem of inadequate resources. The controls are difficult and costly to administer. Their successful enforcement on a comprehensive scale and for a long period of time cannot be taken for granted and might prove impossible. The controls involve economic costs in the form of rigidities, waste, and disrupted production. If long continued, they weaken incentives to work and to supply goods in exchange for money. In the long run, the resources for development—and development is a long-run problem—must come from taxes or savings out of the current income of the people, or they must come from resources provided from abroad. The problem of inadequate resources must be faced and met. It cannot be hidden by the excessive creation of credit reinforced by controls to avoid an obvious and active inflation.

Additional Home Resources

If the Five Year Plan is to be achieved without risking serious inflation, measures will have to be taken to secure a larger amount of resources from current domestic output. As has been pointed out, the Planning Commission has assumed that the public will voluntarily save a very large fraction of the increase in income that is expected to take place in the period of the Plan. In view of the low income per capita

prevailing in India and the modest increases that may occur, it is difficult to believe that the desired savings will come about automatically. Careful consideration will need to be given to policies that will stimulate saving, by both business firms and individuals; and to make up a deficiency in voluntary saving it may be necessary to rely on compulsory measures, such as social security contributions, taxes, and higher prices for services of public enterprises.

Savings and social security

Private saving. An important part of the resources for the Five Year Plan is expected to come from the savings of individuals. The Government has placed great stress on encouraging small savings and mobilizing them for investment in the public sector. The small savings program has contributed a worth-while sum to government resources in recent years. This program includes deposits in post-office savings banks, national savings certificates, and Treasury savings deposit certificates. The net increase in savings under the program has been as follows:

1948–49	Rs 300 million
1949–50	262 million
1950–51	334 million
1951–52	356 million
1952–53 (revised estimate)	440 million

This record is encouraging. Additional efforts might take the form of extension of postal savings facilities to more post offices, particularly in villages, and more publicity and promotion for small-denomination savings certificates and stamps. Although the immediate increase in savings might be small, and the cost of acquiring such savings high, the campaign would be desirable as a means of fostering thrift and of giving the public a sense of participation in the development program.

In the organized sector of the economy, self-financing by business firms must provide an important part of savings. Reinvestment of business profits has been and continues to be a major source of capital formation in the industrialized countries. In India, medium-sized and large-scale enterprises can be expected to do a substantial amount of saving by reinvesting earnings, if business is profitable and there are good opportunities for additional investment in the industries in which these firms operate. Business will not be able to save if price controls squeeze profit margins too tightly or if taxes are excessive. Both the remaining price controls and taxes on corporate profits should be re-examined with a view to facilitating internal financing by business of capital outlays for replacement and expansion.

Social security. Old-age, disability, and survivors-benefit plans and, to a lesser extent, other social security programs typically require current contributions from employees and employers to finance future benefits. From the point of view of the beneficiaries these schemes give rise to savings. They create a net addition to national savings so long as current contributions exceed current benefit payments. For a system based on actuarial principles and financed entirely by contributions of employees and employers, this will be true (1) of a new plan under which participants do not become eligible for full benefits until they have contributed for a period of years, or (2) of an established plan if the number of participants and their wage levels are growing year by year.

Compulsory contributions by employers and employees are more acceptable than equal amounts of ordinary taxes because of the direct relation between benefits and contributions. Nevertheless, social security contributions, like ordinary taxes, are subject to economic limits when they unduly compress consumption standards of workers or add excessively to employers' labor costs. Furthermore, social security plans may result in an expansion of welfare expenditures of government rather than in net savings, if benefits are not conservatively related to the contributions of workers and employees.

With these cautions in mind, it may be worth noting in general terms the actual experience of other countries with social security systems. Several countries, underdeveloped as well as highly developed ones, have succeeded in securing large supplements to private and government savings through their social security systems. On the other hand, in a few countries social security contributions of employers have been set so high as to bring about inflation through an excessive rise in labor costs. And in some instances, social security benefits have been increased so far beyond the contributions of employers and employees as to bring about budgetary difficulties for the government in meeting the obligations of the social security system.

If the Government of India can keep social security contributions and benefits within the capacity of the economy, it will for an extended period secure net savings from a social security program. The compulsory provident funds, organized under legislation which became effective in 1952, provide a useful foundation for such a program. At present, these funds cover factories employing fifty or more persons in six industries: textiles, iron and steel, cement, engineering, paper, and cigarettes. There are also funds for coal mining and government employees, under separate legislation. Although it is advisable to proceed cautiously with a new plan, consideration should be given to the gradual establishment of a com-

prehensive social security system covering all persons engaged in commerce and industry in firms employing, say, ten or more persons.

Taxation

Adequate taxation is especially important in securing resources for development, in view of the large role assigned to Central and State Governments in the Five Year Plan and the difficulty of increasing private saving. Taxation is a direct method of assuring that the required portion of any increase in national product is diverted from consumption and made available for development. The tax system, however, can provide resources for development only if the revenue yield exceeds the amount necessary to cover ordinary government expenditures of a nondevelopmental nature. The following comments relate to a few general issues respecting taxation as a means of obtaining resources. A comprehensive survey of the revenue system is being undertaken by a high-level Taxation Enquiry Commission recently appointed by the Government.

General considerations. In 1950–51 the yield of Central and State taxes was only about 7 per cent of national income. The Five Year Plan assumes that this relationship will be approximately maintained, with tax revenues rising by about Rs 700–800 million a year by 1955–56 and national income by Rs 10 billion. Although the increase in revenue would only parallel the projected rise in national income, an increase in present tax rates would be required to maintain this ratio, in view of the fact that some nonrecurrent receipts from export duties and arrears of income tax were collected in 1950–51.

The ratio of taxation to national income is much lower in India than in the industrialized countries, and appears also to be considerably lower than in some neighboring countries (Ceylon and Burma, for example) and in some of the larger Latin American countries. Although this comparison is of limited significance, in view of economic differences among the countries and shortcomings of the basic statistics, it does suggest the feasibility of larger tax revenues in India. Admittedly, the scope for additional taxation is limited, because a reduction of consumption brought about by heavier taxes on lower income groups would cause great hardship and might impair health and working efficiency. As regards higher income groups and business firms, increased taxation would not augment resources for development by the full amount of its yield because a considerable part of the revenue would be at the expense of private savings.

Taxes levied to finance economic development are likely to be less burdensome than taxes that cover expenditures for defense, administration, and other ordinary government functions, if the development outlays yield a prompt return in the form of increased output and income. Fur-

thermore, the diversion of private savings to public developmental purposes through taxation of the saving groups affects the country's productivity less than use of these resources for current government operations. These generalizations do not mean that government expenditures for current operations are necessarily wasteful; they imply merely that a poor country should economize on public as well as private consumption in order to secure resources for development.

The Central and State Governments should give special attention to the possibility of increasing (a) taxes that have not kept pace with rising prices and revenue requirements over the past ten or fifteen years, (b) taxes and charges that will claim a part of additional income directly attributable to the Five Year Plan, and (c) taxes that will restrain unnecessary consumption.

Important changes have occurred in the relative yield of the principal taxes in India since 1937–38 (Table 16). Perhaps the most striking development is the growth of income taxes, but Central excises have also expanded greatly in relative importance and State sales taxes have emerged as a major revenue source. These changes indicate that the tax system has exhibited considerable flexibility in the past and encourage the belief that it can be adapted to future needs. At the same time, the figures point to the inelasticity of the yield of land revenue and of stamp duties. Although customs duties have declined in relative importance,

TABLE 16. PERCENTAGE COMPOSITION OF TAX REVENUE, CENTRAL AND STATE GOVERNMENTS OF INDIA, SELECTED YEARS

	1937–38[1] (1)	1944–45[1] (2)	1946–47[1] (3)	1950–51 (4)	1952–53[2] (5)
Taxes on income[3]	11.8	48.0	36.6	28.2	26.4
Customs	34.1	10.2	20.8	25.0	26.9
Central excises	5.7	9.5	9.7	10.7	12.1
State excises	10.9	11.4	11.9	7.8	6.8
Land revenue	19.8	7.9	7.0	8.2	9.3
Sales tax	—	2.2	3.0	8.8	7.8
Stamps	8.2	4.1	4.6	3.8	3.6
Other taxes	9.4	6.7	6.4	7.5	7.1
Total	100.0	100.0	100.0	100.0	100.0

[1] Undivided India.
[2] Revised estimates.
[3] Includes agricultural income tax.

Sources: Data in columns 1–4 are from Government of India, *Report of the Finance Commission, 1952* (New Delhi, 1953) pp. 40 and 55. Data in column 5 are based on figures from Government of India, Planning Commission, *Five Year Plan: Progress Report for 1951–52 and 1952–53* (New Delhi, May 1953), p. 9; and *Explanatory Memorandum on the Budget of the Central Government for 1953–54* (New Delhi, 1953), pp. 1 and 10.

they have responded fairly promptly to changes in imports and exports and now yield roughly the same amount as the income taxes.

Land revenue. This source of revenue has lagged conspicuously behind other major taxes and behind the rise in money incomes and prices. Since 1937–38 it has fallen from second to fourth place among tax sources. Before the war, land revenue accounted for almost one third of the revenue that the Provinces of undivided India raised from their own sources (i.e., total Provincial revenue minus devolution of revenue and grants from the Center). In 1951–52 land revenue represented less than one sixth of State revenue from own sources.

This trend is the continuation of a long-term downward movement in the proportion of receipts from land revenue. The trend is partly attributable to the rise of new sources of revenue; but the change is also attributable to the failure to adjust land revenue to the rising price level. Although land revenue has increased in money amount, it represents less buying power and a smaller proportion of agricultural output than before the war. The most consistent statistical series on Provincial-State finances is that for the seven Part A States that were not partitioned. In 1951–52 these States collected about 50 per cent more land revenue than in 1938–39, whereas the index of wholesale prices of major agricultural commodities averaged more than five and one-half times the 1938–39 average. Since 1951–52 land revenue has increased to some extent and agricultural prices have receded. Nevertheless, a great discrepancy persists between the rise in prices and the yield of land revenue.

The rise in prices of both agricultural and other commodities and the consequent reduction in the real yield and real burden create a strong presumption in favor of a substantial increase in land revenue. The case for increased land revenue does not rest on any assumption that farmers' real incomes have increased proportionately to agricultural prices Clearly they have not. Nevertheless, regardless of the size of the producer's marketable surplus or the development of other prices and costs, the rise in agricultural prices has lightened the real burden of land revenue simply because the payment now represents a much smaller amount of agricultural produce and a smaller proportion of the gross yield of land. Furthermore, the decrease in real yield of land revenue has come about by default rather than by deliberate decision.

It may not be desirable to attempt to raise land revenue proportionately to the increase in agricultural prices, as the levy may have been unduly burdensome in the late 1930's and prices of agricultural commodities may fall somewhat below the present level. Even so, it should be possible to raise significantly more from land revenue than the Rs 340 million which the Five Year Plan calls on the States to raise over the

whole period of the Plan from taxation on land, that is, land revenue and agricultural income tax. Since 1951–52, the States have increased land revenue appreciably, by more than Rs 100 million in 1952–53 (revised estimates) and by a further Rs 70 million according to the 1953–54 budgets. A considerable fraction of this increase, however, has been realized in connection with the abolition of intermediaries (zamindars) and is earmarked for their compensation. This part of the land revenue represents neither an increase in the burden on cultivators nor an addition to the net receipts of the States.

It probably will not be feasible to restore the real yield of land revenue immediately. But it is desirable to act as promptly as possible to obtain more from this source, both because of the urgent financial needs of the States and because further delay will strengthen economic and political objections to the adjustment. A systematic reassessment of land is a time-consuming process. It may be feasible, however, to adopt a system of surcharges to existing land revenue pending completion of new assessments.

Import duties and excises. A variety of taxes can be used to restrain consumption and provide additional resources for development. Although import duties and excises are the most selective measures, other taxes also have this effect. In a country like India there is a fairly sharp distinction between the goods consumed by the poor and those bought by higher income groups. It is possible, therefore, to impose consumption taxes that will not significantly burden the lower income groups. It is less easy to raise large amounts from such sources, however, without further depressing the standard of living of the middle classes, which include many people who have already been severely squeezed by inflation.

The Central Government now imposes customs duties on virtually all imported consumer goods except food grains, and levies excise taxes on a number of domestically produced consumer goods. There remain a few items that many governments consider suitable for excise taxation that are not especially taxed in India, and it may be possible to raise the rates of some import duties and excises. To some extent this policy was adopted in the 1953–54 budget, which allows limited import quotas for semiluxuries (toilet articles, certain textiles, etc.) and imposes high duties on such articles. A detailed study would have to be made to determine whether any large amount of revenue can be obtained from such taxes on imports and home goods.

Income and profits taxes. If incomes are converted at the official exchange rates, it appears that income and supertax rates are higher in India than in the United States and Canada and only a little lower than in the United Kingdom at most income levels. This method of compari-

son, however, exaggerates the severity of the Indian income tax. One reason is that the internal purchasing power of the rupee is probably greater for the goods and services bought by higher income groups than is indicated by the official exchange rates. More important is the fact that a given amount of money income places a person higher in the social and economic scale in India than it does in the United States or the United Kingdom. An income of Rs 15,000, for example, "means more" in India than an income of $3,150 in the United States. This income would be rather less than the average wage for factory workers in the United States, but in India it would place its recipient well toward the top of the income pyramid. On the other hand, the absence of exemptions for dependents and the practice of taxing Hindu undivided families as a unit (with only twice the usual exemption limit) make for a comparatively heavy tax on large families.

The Constitution reserves to Part A and Part B States the power to levy taxes on agricultural income. Several States have not used this power; and in the States where agricultural income taxes are imposed the rates are generally lower than those of the Central Government tax on nonagricultural income, especially in the higher ranges of income. The failure to make full use of agricultural income taxes seems anomalous in view of the dominant role of agriculture in the economy. Land revenue, which is in the nature of a fixed charge, does not seem to be an adequate substitute for a graduated tax on net income. If land revenue and other expenses are deductible, there is a strong case for taxing net agricultural income at the same rates as income from other sources. With the present exemptions, the tax would apply mainly to the diminishing group of landlords and to plantations. Although the yield would probably be small, the tax appears to be justifiable in principle.

In appraising the severity of taxes on business profits, it is important to take into account the adequacy of allowable deductions. The rise in prices during the war and postwar years has provoked a debate in India and in many other countries regarding the adequacy of depreciation allowances based on the original cost of plant and equipment. It is argued that when depreciation is based on historical cost, as is the rule in India, profits are overstated and the income tax makes it difficult for firms to finance replacement from internal funds. Some countries—for example, France and Belgium—have permitted a general revaluation of capital assets and a corresponding adjustment of depreciation allowances. Other countries, where there has also been a considerable rise in prices, have held fast to the original-cost principle.

This is a complicated issue that cannot be easily resolved. It is true that historical-cost depreciation allowances do not measure the current

value of capital consumed in the process of production and are insufficient to finance replacement of assets acquired before the price rise. On the other hand, it must be recognized that the increase in prices of buildings and machinery is itself an indication that ownership of these assets has served as at least a partial hedge against inflation. A tax reduction for those who acquired depreciable property when prices were lower than they now are would accentuate the advantage that this group already enjoys in comparison with holders of savings accounts, bonds, and other fixed money claims and recipients of inflexible salaries. From the point of view of maximizing public and private savings and capital formation, it seems desirable to link any tax adjustment directly to replacement or expansion. Unless accompanied by a requirement that the funds be reinvested, an increase in depreciation allowances on existing assets would permit larger distributions of profits, which would be used in part for additional consumption.

These considerations seem to indicate that the best approach is to allow liberal amortization provisions for new depreciable assets acquired for either replacement or expansion. This approach limits the tax concession and at the same time offers important assistance to firms wishing to modernize or expand. The "initial allowances" that have been granted in India and the United Kingdom are examples of this type of measure. Under this arrangement the taxpayer is permitted to deduct from taxable income a substantial percentage of the cost of a new asset immediately after its acquisition. In the United Kingdom the Tucker Committee on the Taxation of Trading Profits concluded that suitable initial allowances, but with total deductions limited to the actual cost of the asset, are the most appropriate form of tax adjustment for increased costs of capital assets.[6]

Betterment levies and service charges

Betterment levies and irrigation and power charges, as recognized by the Planning Commission, are among the most desirable means of capturing for the Government a part of the additional income directly attributable to the Five Year Plan. Betterment levies are intended to absorb part of the "unearned increment" in the value of the land served by a new irrigation project. It seems reasonable that the State should appropriate part of the rise in value which reflects the expected additional agricultural yield attributable to the project. A betterment levy can be assessed at the inception of a project, but beneficiaries must be allowed to pay their assessments over a period of years as they actually

[6] *Report of the Committee on the Taxation of Trading Profits* (London, April 1951, Cmd. 8189), pp. 35–46.

experience an increase in income. The immediate effect of betterment levies in providing additional resources for development would not be large, but the revenues would facilitate the maintenance or expansion of the development program in the future.

The appropriate policy with respect to water rates, electric power charges, railway rates, and prices charged by other government enterprises is not always easy to determine. Although there are valid reasons for offering some services of public enterprises at prices below their full cost, the general policy should be to attempt to cover in the price all operating expenses and capital costs. Capital costs consist of interest on the investment and adequate depreciation allowances. Special justification should be required for departures from the policy of full-cost pricing.

Charges below full costs inevitably imply subsidies for users of the service which must be paid for by taxpayers. It is by no means clear that this combination of subsidies and taxes will necessarily improve the distribution of income or perform any other desirable function. Furthermore, the capacity of both the Central and State Governments to raise tax revenue is limited. If enterprises that could be self-supporting require a subsidy out of general revenues, other desirable public services will have to be curtailed because of inadequate financial resources. Finally, if the demand for the service is such that the full capacity of the enterprise would be used when charges cover all operating and capital costs, a lower charge is likely to result in an economically less efficient use of the service.

With respect to an established project, the question arises whether depreciation and interest allowances should be based on original outlays or on the cost of reproducing the facility. This is a matter of great importance in view of the permanent increase in the price level that has occurred since large investments were made in irrigation and power projects and the railways. It is implied in the considerations on which the general principle of full-cost pricing is based that the relevant costs are current costs of reproduction. If charges are based on original costs incurred when the price level was lower, the capital is in effect being consumed by users of the service. Inefficient use of the service may be encouraged, as in any other situation in which costs and returns are out of line. Even if waste could be minimized by effective rationing, there would remain a windfall gain for those who were fortunate enough to be served by a facility completed when prices were lower.

Betterment levies and full-cost irrigation and power charges are required, in most instances, to prevent an erratic and inequitable distribution of benefits and costs of public investment, as well as to promote economical use of the services. Appropriate levies and charges will not

absorb the entire benefit of the projects to cultivators and power users. They will still enjoy a net gain, from the more efficient use of their own labor, land, and capital; and the community will benefit from the greater production and the general rise in real incomes.

In some cases, however, exceptions to the principle of full-cost pricing are unavoidable. Other exceptions may be advisable as a matter of choice. Public authorities, like private investors, sometimes find, after they have sunk capital in an enterprise, that the services cannot be sold at a price that will cover all costs. If current operating expenses can be met, it will be less wasteful to operate the facility than to abandon it. A more difficult theoretical question is presented when it is possible to cover full costs but the price that will do so will so restrict the use of the service that the facility will operate at less than full capacity. Here two sets of considerations come into conflict. One is the truism that idle capacity is socially wasteful. The other is the inescapable fact that costs not covered by prices must be met out of general revenues, so that opportunities of providing other services will be restricted and the burden of providing public investment facilities shifted to taxpayers. The pragmatic approach is to relax the requirement of full-cost pricing only when there is strong reason for believing that it would result in a large unused capacity and when the government's budget position allows a subsidy to be provided.

A general re-examination should be made of charges for irrigation water, electric power, railway transportation, and other quasi-commercial services. In determining whether charges are adequate to cover full costs, an allowance should be made for interest and depreciation on the basis of the present cost of replacing the plant and equipment. The Planning Commission has recommended that the States make fuller use of betterment levies and water charges. Some progress has been made, and the States have agreed to raise Rs 295 million from new or increased betterment levies and irrigation rates over the period of the Plan. This seems a modest goal in view of the large amount to be expended on new irrigation works and the sharp rise in construction and equipment costs over the past decade or so.

Need for positive action

Two conclusions emerge clearly from this analysis. First, home resources even as estimated are not adequate for carrying out the Plan without resorting to measures that would risk serious inflation. Second, even the estimate of resources to be secured through home savings will not be realized unless positive action is taken to divert more of the expected increase in output into public or private savings.

It is hazardous to attempt to set quantitative standards for a country's capacity to save and to pay taxes. Nevertheless, it is evident that India can and should attack with renewed energy and ingenuity the problem of securing additional home resources for development. With greater effort it should be possible, at least, to approximate the goal set for public saving in the Five Year Plan. It will be much harder to assure the projected level of private saving and investment or to expand public saving still further to make up for a deficiency in the private sphere. Even after every reasonable effort has been made, it is certain that available home resources will still fall short of the amount needed to proceed with the modest development program, and to start the economy of India toward steady, if slow, progress in expanding production and attaining higher living standards.

International Payments and the Five Year Plan

When there is a deficiency of real resources for development, it is not possible to determine how much of the deficiency is in the form of domestic resources (home-produced goods) and how much is in the form of foreign resources (import goods). If the investment program of the Five Year Plan is undertaken without adequate resources, inflationary pressures will develop in the economy. It may be possible through price control and rationing to suppress for a time the manifestation of these pressures in the form of higher prices of essential goods. But the pressures of excess demand will remain and at one point or another they will break through. One of the points at which they are most likely to break through is in the international payments of India.

Exchange resources and the Plan

When a country undertakes investment in excess of the real resources that are available, the inflationary pressure manifests itself in two forms: first, in some rise in domestic prices; second, in some increase in the balance of payments deficit. In India, an increase in incomes would be accompanied by a relatively large increase in the demand for food and a significant increase in the demand for cloth. These are export and import goods. A smaller part of the increase in incomes would be spent on purely home goods. For this reason, the balance of payments is likely to be the focal point of any inflationary pressures in India.

Although imports provide only a small portion of the supply of food grains, any increase in consumption would have to be met in the short run by imports. Domestic production cannot be quickly increased in response to demand, although it can be slowly increased by better irri-

gation facilities and improved methods of production. Almost the entire consumption of cloth is domestically produced, and an increase in demand would almost certainly be supplied from domestic sources. As the textile mills are not producing at full capacity, an increase in output is possible rather quickly. This would, however, require larger supplies of cotton, which would have to be imported. In food and cloth, the two most important categories of consumer expenditure, the excess demand would be concentrated on imports in whole or in part and would give rise to a serious balance of payments deficit.

It would be possible to intensify import restrictions and thus hope to limit the balance of payments deficit. The inflation would then attack the export sector. If an increase in output of cloth, for example, is limited by the unavailability of larger supplies of imported cotton, domestic demand would absorb a larger part of textile output. To a greater or lesser extent, this would apply to other export goods, so that inflated home demand would operate to reduce the supplies available for export. As a practical matter, even the production of export goods would be affected by the inflation. As the excess demand is prevented from expressing itself in larger imports, it would be turned back to the domestic economy and would express itself in higher prices and higher costs. With higher domestic costs, world prices of export goods being unaffected, production would be less profitable and output would decline.

Even under the most favorable circumstances, with larger domestic resources than appear likely to be available, the payments of India may be subjected to heavy pressure in carrying out the Plan. Only with very severe restrictions on imports of consumer goods could India have enough foreign exchange to pay for the imported equipment contemplated in the Plan. And this requires the assumptions that export receipts will not be seriously affected by developments in India or in world markets, and that India will draw down its sterling balances to the extent foreseen by the Plan.

There is no reason why the sterling balances should not be used for development during the next three years in the amounts already agreed with the United Kingdom. It is important, nevertheless, to bear in mind that most of the remaining sterling balances are part of the essential foreign exchange reserves. With its large trade, India cannot reduce its reserves much beyond the level they are expected to reach by the end of the Five Year Plan without weakening its capacity to deal with any future payments problems that may emerge.

The need to maintain and strengthen India's position in export markets is recognized in the Plan. If serious inflation is avoided in India, supplies for export will be forthcoming. This is one of the reasons why

monetary policy must be directed to avoiding inflation. It may be that a deterioration in world markets will result in a fall in the price or the volume of India's exports. This is not a contingency that can be guarded against by India. The maintenance of adequate demand in world markets depends primarily on the policies of the great industrial countries. All that India can do is to hold enough reserves to deal with ordinary fluctuations in its payments position.

Even without inflation, the payments position would be weakened, and the capacity to carry out the Plan would be threatened, if there were a widespread crop failure in the next few years. Unless a grant or credit were available at the time, the extraordinary imports of food grains would involve such large sums that India would be unable to pay for the imports of equipment essential to the Five Year Plan. In countries like India, where the crop is dependent upon the vagaries of the monsoon, subnormal crops must be expected from time to time and a widespread failure of the crop may occur at any time. If the Five Year Plan is not to be jeopardized by a crop failure, steps should be taken in the near future to assure India an adequate supply of food under such emergency conditions.

The world supply of wheat is adequate to meet any extraordinary future needs of India without affecting world market conditions. (This is not the situation with respect to rice.) It may be possible for India to make arrangements for an emergency supply of wheat that would meet the need for extraordinary imports of food grains in the event of a crop failure. If such arrangements could be made with the United States, Canada, and possibly Australia, it would give India assurance that the foreign exchange resources needed for the Five Year Plan would not be drained away because of a bad crop. Ordinary imports of food grains would continue to be met by purchases out of current earnings.

Foreign aid and general development

The problem of resources for development in underdeveloped countries has two aspects: there is the payments aspect arising from the shortage of foreign exchange for the purchase of imported equipment; and there is the inflation aspect arising from the shortage of real resources because of the inadequacy of domestic savings. The poorer the country, the more likely it is that the difficulty of securing development with stability will arise from the inadequacy of total resources for investment rather than the lack of exchange for imported equipment.

Where the problem is one of inadequacy of resources, it cannot be met simply by providing foreign loans or grants to pay for imported equipment. And there is the danger that countries will distort their invest-

ment programs to qualify for foreign aid available for imported equipment. Instead of giving priority to the most important projects, which may have a very small content of imported equipment, there will be a tendency to give priority to spectacular projects for which foreign aid is available because it has a larger content of imported equipment. Or, if the more important projects are given priority, they will be undertaken in a manner that uses imported equipment wastefully where local labor and materials could be used more economically. If foreign aid is limited to loans or grants for imported equipment, it may act as an inducement to countries to resort to inflationary policies to finance development. Such a policy on foreign aid encourages the advocates of inflationary policies who argue that domestic resources are never lacking for development, that their provision is merely a matter of finance.

Countries should be encouraged to set up moderate development programs suited to their practical needs. They should be encouraged to raise as much as is reasonably possible from taxes and domestic savings toward meeting the cost of their development programs. A country giving foreign aid in the form of grants or loans might wish to limit the amount of such aid, either because of its own need for resources or because of the risks of the investment. And a country receiving foreign aid in the form of loans might wish to limit the amount it borrows because of the burden of repayment. In either case, the amount of aid given or received being determined, there is no reason for confining the aid to the purchase of imported capital equipment.

Another point that is often emphasized is that foreign investment should be so directed as to increase a country's exports or to decrease its imports. It is assumed that the investment will then act directly to strengthen the payments position by at least as much as the additional exchange requirements to service the investment. This is an erroneous view of the relation of foreign investment to the balance of payments. Even if all foreign investment went into the export-import field, it need not follow that the payments position would remain strong. For other investment would also be undertaken which might have the effect of increasing demand for import goods or have some effect on the domestic absorption of export goods. It is futile to earmark foreign investment for the export-import industries and domestic investment for purely home industries.

Every foreign investment, like every domestic investment, is consistent with a strong balance of payments, provided the investment is in response to a market demand for the output and does not give rise to inflation. The only important principle for guiding the direction of investment is that it should be in industries for which the economy is

suited. If there are profitable export markets for goods that can be produced in India, those are fields into which investment should go (with foreign or domestic capital). If there is a demand for import-type goods that can be produced profitably in India, those are fields into which investment should go (with foreign or domestic capital). It is a mistake to assume, however, that the new investment must necessarily be in the production of export- or import-type goods in order to increase exports or decrease imports. Price substitution can be as effective as technical substitution in displacing imports with home output or in releasing home goods for export. The essential point is that, if the new output can be sold at prices that will create demand, such price substitution for import-export goods will take place.

If there is a reasonable degree of price flexibility and if wage rates are related to productivity in the export-import industries, an appropriate monetary and exchange policy can maintain a level of aggregate demand suited to full employment without inflation and at the same time assure over-all balance in foreign payments. If there is inflation, however, home demand will absorb the whole value of the additional output, leaving no surplus to service the foreign debt, irrespective of the sector in which the original investment was made.

Foreign resources for development

Clearly, foreign resources can contribute materially to a sound development program. The amount of such resources is not determined by the volume of investment that it would be appropriate to make in export-import industries; nor should foreign resources necessarily be limited to paying for imports of capital equipment.

The amount of additional resources that a country needs to carry out a development program can be properly stated in only one way. Given the levels of income, expenditure, and savings, and the pattern of production, consumption, and investment, then the deficiency of resources is the excess of the cost of investment over the amount of domestic savings (and foreign investment). This deficiency will manifest itself in the excess of demand for particular goods over the supply of the same goods produced at home or imported without incurring an unwanted deficit in the balance of payments. The goods that cannot be produced at home or that cannot be paid for if imported are the real resources the country needs to carry out the development program without inflation.

What these goods will be depends upon the pattern of consumers' expenditure and the nature of the investment projects in the development program. In India, a very large proportion of the increase in incomes in the initial stages of the development program would be spent

on food grains. It has been estimated that as much as 40 to 50 per cent of the average increase in income would be spent on food grains, largely on wheat and rice. As larger supplies of rice may not be readily available, much of this increased expenditure would be on wheat, particularly if a larger rice-wheat price differential develops. Another significant part of the increase in incomes would be spent on cloth. As textile capacity is available, the actual deficiency is one of cotton rather than of cloth. Deficiencies are also likely to appear for miscellaneous consumer goods, perhaps for other raw materials, and, of course, for capital equipment. All these goods could be imported from abroad.

Undoubtedly, the increased demand arising from a rise in incomes would also be directed to other goods distinctively domestic in character. In the later stages of the development program, when production responds to new investment, output of such goods will be increased; in the initial stages of the development program, however, the increase in output might fall short of the increase in demand. This deficiency of resources can be made good by imports. Presumably, with a very small rise in the prices of such goods, demand can be induced to shift to other goods whose supply can be more fully expanded through imports. All this indicates that foreign resources could provide an appropriate substitute for domestic resources in carrying out the Five Year Plan in India.

The Mission has studied the data provided by the Planning Comission. It could not, however, make independent estimates of its own, either of the resources needed for the Five Year Plan or of the resources available for the Five Year Plan. The aggregate investment that needs to be financed (investment apart from the labor of small proprietors) is certainly not less than the amount set forth in the Plan. The estimate of resources set forth in the Plan is probably in excess of the amount that can be realized on the basis of present policies. It should be possible, however, to increase the domestic resources for the development program by policies designed to increase tax revenues and savings and to divert investment from less productive to more productive uses. Even with the most forceful measures, however, there is likely to be a large deficiency of resources for the Five Year Plan. If investment is curtailed, the deficiency of resources may not be apparent; nevertheless, it will be real and will hamper economic progress.

Foreign aid and future payments

The Government of India is now receiving aid for its development from several countries. The United States, the United Kingdom, Canada, Australia, New Zealand, and Norway, among others, have provided aid

in one form or another. The Five Year Plan is so essential to the well-being of the people of India that it should be possible to find an agreed basis for additional foreign aid to India. To the extent that such aid is available on a grant basis, the strain on the Indian economy will be reduced. Income levels are so low and domestic savings so limited that repayment of credits would necessarily slow down the rate at which consumption standards can rise and development be accelerated in the future.

In any case, India must go forward with its development with the aid of whatever foreign capital it can obtain. It would be a mistake to exaggerate the burden of servicing foreign obligations incurred for development. The payment of interest and amortization of principal would require the Indian economy to set aside part of its future output and part of its future foreign exchange receipts for these purposes. On the other hand, development with foreign capital will increase the output of the Indian economy by much more than the cost of servicing the debt. If the development is suited to the economy, this increase in output will result in an improvement in India's payments position sufficient to provide for growing import needs as well as service requirements on the foreign debt.

The payments position of India on foreign investment account is now much stronger than before the war (Table 17). In the fiscal year 1938–39, the net transfer of investment income abroad from undivided India amounted to Rs 270 million, and amortization and other contractual payments accounted for a net payment abroad of another Rs 105 million.

TABLE 17. INDIA'S PAYMENTS ON FOREIGN INVESTMENT ACCOUNT, COMPARED WITH RECEIPTS FROM EXPORTS

(In millions of rupees)

	1938–39	1949	1950	1951	1952
1. Payments for investment income	271	179	236	239	104
2. Amortization and other contractual payments	105	—	4	8	37
3. Total investment payments (1 + 2)	376	179	240	247	141
4. Receipts from exports, f.o.b.	1,858	4,260	5,561	7,046	6,128
5. Total investment payments as per cent of receipts from exports	20	4.2	4.3	3.5	2.3

Source: International Monetary Fund, *Balance of Payments Yearbook, 1938, 1946, 1947*, p. 214, and *International Financial Statistics*, June 1953, p. iii.

These two items together amounted to one fifth of the total export proceeds of India in 1938–39. In the calendar year 1951, the net transfer of investment income was roughly Rs 240 million and amortization and contractual payments only Rs 8 million—together amounting to only 3.5 per cent of the export proceeds in that year. The situation was actually better in 1952. It is clear that net payments on foreign investment account represent a much smaller real burden than in prewar years. The conclusion is reinforced if another item in the balance of payments is taken into account. The 1938–39 balance of payments included net transfers of Rs 140 million on Government of India account not included elsewhere. An unknown portion of this represented interest payments, and thus constituted payment abroad on foreign investment account. In recent years, transfers on Government of India account not included elsewhere have actually resulted in sizable net receipts.

The great change in the foreign investment account reflects, in the main, the reduction in India's gross foreign indebtedness during the war. In the late 1930's, British investment in railways and official securities (i.e., excluding British investment in the private sector) was estimated at about £400 million. Apart from this, the Government of India was obligated for large pension payments to retired members of the Indian Civil Service resident abroad. These payments comprised a significant part of the transfers of the Government of India to England. For practical purposes they represented a fixed obligation not unlike a foreign debt.

The situation changed very sharply during the war. Large sterling assets were accumulated and part of these funds were used to repatriate official securities held abroad. Arrangements were also made to capitalize India's obligation on pensions to retired members of the Indian Civil Service residing in England. There was also some liquidation of private British investment in India in the early postwar years. This investment has been resumed in recent years and there has also been some increase in the market value of the old investment. Comparable estimates of private foreign investment, prewar and postwar, are not available. However, the census taken by the Reserve Bank of India shows that the book value of all foreign direct and portfolio investment in India was approximately Rs 3.2 billion in 1948 (excluding miscellaneous short-term balances), probably a lower figure in rupee value than the comparable prewar private foreign investment.

Apart from the change in total foreign investment, the composition of foreign investment in India now includes a larger proportion of direct and a smaller proportion of fixed interest obligations than before the war. Income transfers abroad pertaining to direct investments tend to

CORRIGENDUM

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Article, "Economic Development with Stability", page 385, lines 11-12:

Delete sentence, "About $10 million is owed to the Government of Canada."

fluctuate with foreign exchange receipts. Thus in 1951, when prices were high and export receipts were over Rs 7 billion, net transfers of investment income amounted to Rs 239 million; in 1952, after prices fell and when export receipts were Rs 6.1 billion, net transfers of investment income amounted to only Rs 104 million.

While India's official sterling debt has been practically wiped out, the Government of India has incurred new obligations in dollars. A debt of $190 million was incurred to the Government of the United States on the wheat loan. Within two years India will owe the International Bank about $100 million for loans already made, which will in due course be spent on development projects. ~~About $10 million is owed to the Government of Canada.~~ The postwar dollar debt incurred by the Government of India is thus about $300 million, exclusive of an obligation of $100 million to the International Monetary Fund. Even so, the over-all position on official foreign indebtedness is enormously improved. In rupees, the dollar debt represents about one fourth of the prewar official sterling debt; in dollars, it represents about one sixth of the prewar official sterling debt; and in real terms, it represents about one twelfth of the prewar official sterling debt.

Perhaps no factor is weighted more heavily by U.S. investors in the determination of the creditworthiness of a country than the country's dollar payments position. Before the war, India was generally a dollar surplus country. In the postwar period, India has been a dollar deficit country, except in 1950. It is quite possible for India to revert to its prewar position as a dollar surplus country. That will depend on three factors: the maintenance of a strong over-all balance of payments; the availability of import supplies from non-dollar countries; and the expansion of dollar exports by India. The over-all payments position of India is very largely a matter of monetary policy. The availability of import supplies, particularly food, from non-dollar countries is beyond India's control, except as it can develop its own agriculture. The expansion of dollar exports may be expected as part of the general development program of India.

If India could meet its prewar obligations on foreign investment without any great strain on its balance of payments, it should be able to meet future obligations, resulting from any new debts, provided its balance of payments position in the future is not materially worse than in the past. There is nothing in its financial history that would for a moment suggest that the Government of India would default on a foreign obligation because of adversity in its payments position. Furthermore, the Government has shown in the past three years that it is capable of

taking financial measures to put its payments in order. Given a liberal trade policy, the resumption of the natural trade relations of the subcontinent, and the development of India's productive capacity, there is every reason for expecting that the payments position of India will be stronger in the future than it has been in the recent past.

The Long-Run Outlook for U.S. Merchandise Imports

Eugene R. Schlesinger*

With the publication of the Report of the President's Materials Policy Commission, under the Chairmanship of Mr. William S. Paley,[1] it has become possible to forecast, with some degree of accuracy, long-run trends in U.S. merchandise imports. Thus far, however, the attempts that have been made to interpret the balance of payments implications of the Report have tended to be of an ad hoc and unsystematic nature; they have led to the erroneous conclusion that, because of the probable future geographic make-up of U.S. imports, the long-run growth of U.S. imports will make little or no contribution to solving the over-all dollar problem. To an important degree, this misconception has arisen because there has been a tendency to focus attention on the Commission's estimates for only a limited number of individual commodities, which comprise only about one third of total U.S. imports. The fact has been overlooked that the Report also provides a useful basis for estimating long-run changes in the other two thirds of U.S. imports.

New Estimates of U.S. Imports

The present paper attempts to give a balanced picture of the over-all and regional balance of payments implications of the Paley Commission's Report. The changes that can be expected in U.S. merchandise imports over the next 25 years are projected on the basis of the commodities specifically analyzed in the Report, and also by utilizing the Commission's forecasts of rates of growth in various sectors of the U.S. economy to estimate imports of all other products. In addition, an attempt is made to overcome the other major shortcomings of earlier discussions of the balance of payments implications of the Paley Report. While previous analyses have dealt only with direct trade relationships

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[1] *Resources for Freedom* (A Report to the President by the President's Materials Policy Commission, Washington, June 1952).

with the United States, the analysis of U.S. import changes presented here is framed in such a way as to indicate both the magnitude and feasibility of any adjustments of non-U.S. trade that may be necessary to eliminate present dollar gaps and to ensure the fulfillment of the secularly rising dollar needs of individual regions.[2]

The Paley Commission estimated that by 1975 the physical gross national product of the United States would be twice that in 1950, and that during the same period the U.S. population would increase by 27 per cent. Most other observers believe these estimates to be reasonable and realistic. If production in other countries should expand to the extent necessary to satisfy the rise in U.S. import demand that can be expected to be associated with these increases, the value of merchandise imports, calculated in terms of 1950 prices, should reach approximately $11.1 billion in 1962 and $15.4 billion in 1975, compared with $8.7 billion during 1952. This implies an annual rate of increase in the physical volume of imports of 2.3 per cent for the 25-year period, compared with an expected rise of about 2.8 per cent per year in the physical gross national product of the United States. Because of the impossibility of forecasting tariff changes with any degree of accuracy, however, the projected rate of growth in imports takes no account of the effects of any future changes in the U.S. tariff.

Estimates based on the imports specifically analyzed by the Paley Commission (hereinafter referred to as "Paley commodities") indicate that such imports can be expected approximately to double between 1950 and 1975. Imports of other products are likely to rise by about 65 per cent, with the largest relative increase anticipated for finished manufactures (Table 1). In fact, the percentage rise for finished manufactures may possibly even exceed the increase for the group of crude and semimanufactured materials included in the list of "Paley commodities".

To the extent to which these estimates can be accepted, the distribution of the over-all increase in imports among major supplying regions will tend to be considerably better balanced than that of the "Paley commodities" alone. A larger share of the total can be expected to come from areas which do not already have relatively hard currencies. Of the expected rise in imports of "Paley commodities" between 1950 and 1975, only about one tenth will probably come directly from the continental countries of Western Europe, their dependent overseas territories, and the sterling area; but of the anticipated increase in imports of other products, nearly two fifths can be expected to come from this group of countries. In view of the higher rate of growth of imports of "Paley

[2] A detailed description of the methods and assumptions utilized to derive the estimates presented in this paper is given in the Statistical Appendix.

commodities", however, the largest relative increases are still likely to come from comparatively hard currency areas, as shown in Table 2.

Nevertheless, the degree of balance to be expected in the regional distribution of the increased imports appears, for two major reasons, to be close enough to justify the conclusion that the future rate of growth of U.S. imports should contribute considerably to the long-term solution

TABLE 1. ESTIMATED PERCENTAGE INCREASE FROM 1950 TO 1975 IN VALUE OF U.S. MERCHANDISE IMPORTS, BY GROUPS

	Imports, 1950		Estimated Imports, 1975		Estimated Percentage Increase in Value, 1950 to 1975
	Million 1950 U.S. dollars[1]	Percentage distribution	Million 1950 U.S. dollars[1]	Percentage distribution	
"Paley commodities"	2,812.9	32	5,512.9	36	96
Other crude and semimanufactured materials	2,164.2	25	3,556.5	23	64
Foodstuffs	2,649.6	30	4,075.5	26	54
Finished manufactures	1,107.6	13	2,215.2	15	100
Total imports	8,734.3	100	15,360.1	100	76

[1] Data are from Tables 8 and 10 in the Statistical Appendix.

of the so-called dollar problem. First, there are indications that during the next 25 years the ratio of imports to U.S. gross national product, which has been declining since the turn of the century, may become virtually stabilized; at the very least, the rate of decline in the ratio should be significantly smaller. As a result, the rise in U.S. imports over the period should probably be sufficient (1) to enable the rest of the world as a whole to self-finance its present current dollar gap, even without any increases in U.S. private foreign investment or in net dollar receipts from invisible transactions, and (2) at the same time to permit these

TABLE 2. ESTIMATED PERCENTAGE INCREASE FROM 1950 TO 1975 IN VALUE OF U.S. MERCHANDISE IMPORTS FROM MAJOR REGIONS

	Imports, 1950[1] (*million 1950 U.S. dollars*)	Estimated Imports, 1975[1] (*million 1950 U.S. dollars*)	Estimated Percentage Increase, 1950 to 1975
Sterling area	1,585.6	2,283.0	44
Continental OEEC countries and dependencies	1,170.1	1,966.9	68
Latin American Republics	2,862.0	4,953.8	73
Canada	1,954.4	3,809.0	95
Other countries	1,162.2	2,347.4	102
All areas	8,734.3	15,360.1	76

[1] Data are from Tables 8 and 10 of the Statistical Appendix.

other countries as a group to increase their nonmilitary merchandise imports from the United States at a rate somewhat more rapid (1.3 per cent per year) than their estimated over-all rate of population growth (1.2 per cent per year).

The second reason for believing that the future rate of growth of U.S. imports should make an important contribution to the solution of the dollar problem is that the regional distribution of these imports will tend to be such that the degree of adjustment in the world trade pattern necessary to *redistribute* the dollars in accordance with the rising dollar requirements of individual regions can be effected without unreasonable strain or undue hardship. With the exception of the continental countries of Western Europe, all the major regions of the world should be able to increase their merchandise exports to the United States sufficiently during the period to eliminate any presently existing dollar gaps and, at the same time, maintain some reasonable rate of increase in their imports from the United States. For the continental OEEC countries and their dependencies, moreover, the rise of exports to the United States can be expected to be large enough to enable this region to achieve these goals through a combination of limited substitution of non-dollar for dollar imports and a moderate increase in dollars earned indirectly from transactions with other countries.

Any longer-run currency maladjustments which may arise should thus be considered not as a dollar problem, but as a problem relating to the pattern of world trade. If the gross national product of the United States increases at the rate predicted by the Paley Commission, the additional dollars made available by the United States are likely to satisfy a very large part of the reasonable requirements of the rest of the world. But, in order that these dollars should be adequately distributed among individual regions, the international trade of other countries among themselves will have to increase more rapidly than their trade with the United States.

Estimated Changes in the Distribution of Imports

The most interesting conclusion of the present paper is a forecast of a relatively large increase of imports of finished manufactures. Our estimates indicate that imports of this class may be expected to double in the period between 1950 and 1975 (see Table 1), compared with an anticipated rise of about 75 per cent for total U.S. imports.[3] The projec-

[3] Estimated U.S. uranium imports could not, of course, be included in the forecast; although rising imports of this material will probably have only a minor effect on the rate of growth of U.S. imports as a whole, they could have considerable importance for some regions.

tion of U.S. imports of finished manufactures is, of course, an extremely difficult task. Because of the existence of close domestically produced substitutes, the level of imports of finished manufactures depends, to a far greater degree than for other classes of imports, on the competitive position in the U.S. market of many individual foreign products. As a consequence, any estimate of the future level of imports of finished manufactures must take account of the interaction of such diverse factors as the burden of U.S. tariffs, the types of monetary and fiscal policy pursued by the governments of exporting countries, and comparative wage rate and productivity changes in competing domestic and foreign industries.

There are good a priori reasons, however, for anticipating a relatively large growth of manufactured imports. A sizable part of these imports consists of high-quality products and luxuries, and, consequently, they would be expected to respond more readily than other kinds of imports to rising standards of living. Past declines in the importance of finished manufactures in total U.S. imports have been due almost entirely to changes in the competitive position of these products in the U.S. market. In fact, the application of various statistical techniques[4] to the data of the interwar and postwar periods indicates that, when the effects of relative price changes are eliminated, a one per cent increase in U.S. gross national product has been associated with a one per cent rise in the physical volume of imports of finished manufactures. If this relationship can be assumed to hold true for the future—and, in view of the very small proportion of the rest of the world's output of finished manufactures currently absorbed by the United States, there is no reason for believing it will not—the expected doubling of the gross national product between 1950 and 1975 should be accompanied by an approximate doubling of imports of finished manufactures.

This estimate is based on the assumption that the competitive position of foreign finished manufactures in the U.S. market will neither improve nor worsen significantly in the period under study. This is believed to represent a relatively "safe" point of view that takes account both of the past trend toward the deterioration of the competitive position of Western European products in the U.S. market and of the generally held conviction that, if the relatively stringent dollar positions of the Western European countries are to improve, the governments of these countries cannot continue to permit the export prices of finished manufactures to increase relative to those of competing U.S. products and will have to pursue appropriate fiscal and monetary policies that will ensure more favorable competitive price relations.

[4] For references, see the Statistical Appendix.

For this reason, the often expounded theory that in the future an increasing share of U.S. imports will come from raw material producing areas appears quite dubious. The manufacturing countries of Western Europe can be expected to participate proportionately with other regions in any rise in U.S. imports, even if their competitive position in the U.S. market deteriorates somewhat.

The same conclusion does not, however, hold true for the monetary areas associated with Western European countries. This is clearly brought out by a summary comparison, calculated in terms of 1950 dollars, of the anticipated changes in the regions' percentage shares in U.S. imports (Table 3). This comparison shows that the relative import-

TABLE 3. ESTIMATED CHANGES FROM 1950 TO 1975 IN SUPPLYING REGIONS' SHARES IN U.S. IMPORTS

	Imports, 1950		Estimated Imports, 1962		Estimated Imports, 1975	
	Million 1950 U.S. dollars[1]	Percentage distribution	Million 1950 U.S. dollars[1]	Percentage distribution	Million 1950 U.S. dollars[1]	Percentage distribution
Sterling area	1,585.6	18.1	1,781.4	16.1	2,283.0	14.9
Continental OEEC countries and dependencies	1,170.1	13.4	1,488.9	13.4	1,966.9	12.8
Latin American Republics	2,862.0	32.8	3,597.1	32.4	4,953.8	32.2
Canada	1,954.4	22.4	2,722.7	24.6	3,809.0	24.8
Other countries	1,162.2	13.3	1,493.6	13.5	2,347.4	15.3
All areas	8,734.3	100.0	11,083.7	100.0	15,360.1	100.0

[1] Data are from Tables 8, 9, and 10 of the Statistical Appendix.

ance of imports from the sterling area and from the continental OEEC countries and their dependencies will probably decline, their respective shares falling from about 18 per cent and 13.5 per cent of total imports in 1950 to around 15 per cent and 13 per cent in 1975. Imports from the Latin American Republics, on the other hand, can be expected to maintain their relative importance; the proportion of aggregate imports from this group of countries is likely to remain at about 32.5 per cent. Imports from Canada and "other countries" may tend to increase in comparative importance, their respective shares rising from 22 per cent and 13 per cent of total imports in 1950 to an estimated 25 per cent and 15 per cent in 1975.

Sterling area

As shown in Table 2, the physical volume of U.S. imports from the sterling area as a whole is expected to be some 44 per cent higher in 1975 than in 1950. The increase for the United Kingdom and its dependent

overseas territories—perhaps a more useful index of the increase in dollar earnings that will be available to meet the United Kingdom's own needs—is estimated at 36 per cent, while the rise for the independent members of the sterling area is calculated at 54 per cent.[5] The latter figure is, however, deceptive, for it is dominated by an expected threefold increase in crude petroleum imports from Kuwait and to a similar, but smaller, increase in imports from Iraq. The predicted increase for U.S. imports of all other products from the sterling area independent members is only 37 per cent.

The expected increase for the sterling area dependencies (5 per cent) is substantially smaller than that for the United Kingdom alone (85 per cent) and reflects an anticipated decline in rubber and tin imports from Malaya. Imports of other products from the dependent territories are likely to increase by 58 per cent—the biggest gains being in bauxite from Jamaica and British Guiana and in copper from Rhodesia.

The limited rise anticipated for imports other than petroleum from the independent countries of the overseas sterling area reflects the relatively poor long-term outlook for mica (India), jute and burlap (Pakistan and India), and wool (Australia and New Zealand). In 1950 imports of these commodities accounted for 46 per cent of U.S. imports from the independent sterling area countries. Because of technological developments, however, mica imports, according to the Paley Commission, are likely to disappear entirely by 1975, while burlap and jute imports may be expected to remain at about the 1950 level. Imports of wool, on the other hand, are not likely to increase by much more than the growth of population (estimated at 27 per cent by 1975), even if domestic production does not expand at all; no rise in U.S. per capita consumption of wool is anticipated, and many experts believe that some decline is inevitable.

Continental OEEC countries and dependencies

The outlook for imports from the continental OEEC countries and their dependencies closely resembles the outlook for imports from the United Kingdom and its colonies: the expected increase is larger for the mother countries than for the dependencies, and the apparent outlook for imports from the traditional large dollar earners among the dependencies is less favorable than for imports from other colonies. The total increase in imports anticipated by 1975, amounting to 68 per cent (Table 2), is considerably larger than that for either the United Kingdom and its overseas dependencies or for the sterling area as a whole. Most of the explanation of this higher rate of increase can be found in

[5] For the data on which comparisons in this and subsequent sections are based, see tables in the Statistical Appendix.

the more favorable outlook for imports from the continental OEEC dependencies: the estimated rise for the continental OEEC countries themselves (76 per cent) is somewhat smaller than that for the United Kingdom, but imports from the dependencies of this group of Western European countries are likely to increase by 42 per cent.

Among the continental OEEC dependencies, the Netherlands Antilles was the principal exporter to the United States in 1950, petroleum products from that dependency accounting for more than half of this group of imports.[6] Since the existing refining capacity of the Netherlands Antilles is already fully utilized, and since Venezuela is apparently planning to expand its own refining capacity as its production of crude petroleum increases, petroleum imports from the Netherlands Antilles are expected to remain at about the 1950 level. However, imports of other products from the continental OEEC dependencies will probably increase by 104 per cent, with imports of seven commodities (bauxite, cobalt, copper, industrial diamonds, lead, nickel, and zinc) accounting for nearly four fifths of the rise. The increase will be focussed upon Africa, where the Belgian Congo (cobalt, copper, and industrial diamonds) and French Morocco (lead, zinc, and cobalt) should prove to be the largest gainers. Outside of Africa, significant rises can be anticipated for New Caledonia (nickel) and Surinam (bauxite).

Latin American Republics

The increase estimated for imports from the Latin American countries as a group (73 per cent) is approximately the same as the increase estimated for U.S. imports as a whole. Imports from Venezuela, Brazil, and (possibly) Cuba are likely to rise by more than the average for the 20 Latin American Republics, the estimate for Cuba being subject to uncertainties about the future of the U.S. sugar quota system.

The largest increase is likely to be in imports from Venezuela. That country's petroleum exports to the United States should approximately double by 1975, partly as a result of diverting sales from other markets, while its iron ore sales to the United States should be about $150 million higher than in 1950. Brazil, which will benefit from a significant rise in manganese exports, should also participate in the large increase in U.S. iron ore imports; as a consequence, although the anticipated expansion in Brazilian coffee sales is only 60 per cent, imports from Brazil are likely to expand by more than the average for Latin America.

Both the rise in imports from the other coffee producing countries and the increase of imports from Chile, Mexico, and Peru will, on the other

[6] The relative contribution of the Netherlands Antilles to the *net* dollar earnings of the continental OEEC dependencies was, of course, considerably smaller.

hand, probably be slightly less than the Latin American average. According to the Paley Report, exports of copper, lead, and zinc from Chile can be expected to rise by 65 per cent by 1975; those from Mexico by 60 per cent; and those from Peru by 75 per cent. Imports from Argentina, Uruguay, and Bolivia are likely to increase comparatively little, owing to the relatively unfavorable outlook for wool and tin.

Canada and "other countries"

As pointed out above, the two broad regions which are expected to increase their relative shares in U.S. imports are Canada and "other countries". Imports from Canada are likely to expand by 95 per cent by 1975, while those from "other countries" will probably increase by 102 per cent. The considerable rise in imports from Canada can be attributed largely to the proximity of that country to the United States, the close financial ties existing between concerns in the two countries, and the rapid rate of growth anticipated for the Canadian economy. The increase for "other countries" is primarily the result of an expected twentyfold expansion in crude petroleum imports, mainly from Saudi Arabia. Imports of all other products will probably increase by 43 per cent. The outlook for Finland (newsprint and woodpulp), Japan (various finished manufactures), and Liberia (iron ore) is more favorable than this average, while prospects for Indonesia (rubber) are less favorable.

Some Over-all Implications of the Anticipated Changes in Imports

The implications of these predicted changes in U.S. imports for the dollar positions of individual regions cannot, of course, be assessed merely on the basis of simple bilateral comparisons with existing situations. Account must also be taken of the possibilities of a secondary redistribution of the increase in the dollar supply through other changes in the network of world trade. But once the question of the feasibility of achieving regional dollar balance through such a secondary redistribution is raised, some preliminary judgment must be made whether, even with the most favorable network of world trade, there will be enough dollars to go around. This implies a comparison of the projected rate of growth in over-all merchandise imports with (1) past trends in U.S. imports and (2) the current and estimated future dollar requirements of the rest of the world as a whole.

Comparison with past trends in imports

The first important observation to be made about the anticipated rate of increase in merchandise imports is that the forecast apparently repre-

sents a continuation of the downward trend in the ratio of imports to U.S. gross national product that has been evident since the turn of the century. In terms of 1950 dollars, our estimates indicate that the 1975 level of imports may be equivalent to 2.7 per cent of the gross national product—compared with 3.1 per cent in 1950, 3.8 per cent in the years 1936–38, and 4.4 per cent in 1929. The basic explanation of this continuation of the downward trend appears to be as follows: in the United States, an important part of the process of economic growth takes the form of introducing successively higher stages of fabrication of raw materials, and this implies a decline in the combined amount of imported and domestic raw materials used per unit of output. Furthermore, U.S. consumers will probably tend to continue to devote an increasing proportion of their rising incomes to the purchase of services.

The rate at which the ratio of imports to gross national product can be expected to decline should, however, be smaller than in the past. Although there will be a tendency for the total amount of raw materials used per unit of output to decrease, the use of imported raw materials relative to domestic raw materials will probably expand, because rising levels of output and resource utilization in the United States will tend to place an increasing strain on the domestic sources of supply of many commodities. In terms of 1950 price levels, 1975 imports have been estimated in the present study as $6.6 billion larger than in 1950. However, if the ratio of imports to gross national product were to decline in the future at the same rate as between 1929 and 1950—a period in which the secular rise in gross national product was 2.8 per cent per year, the same rate anticipated for the period from 1950 to 1975—the 1975 level of imports could be expected to exceed that of 1950 by only $4 billion.

The anticipated slowing down of the rate of decline in the ratio of imports to gross national product in the period 1950–75 is especially significant because 1950 was, in two important respects, an unusual year with regard to the U.S. demand for imports. In the first place, U.S. output of durable goods was abnormally large in 1950, amounting to 27 per cent of the gross national product, compared with an average of 18 per cent in the 25 preceding years. The Paley Commission believes that there will be a definite tendency toward a restoration of the traditional relationship, with the 1975 durable goods component of the gross national product amounting to approximately 20 per cent. For this reason, durable goods production—the import content of which is relatively high—is expected to grow at an annual rate of 1.6 per cent, against the anticipated increase of 2.8 per cent in the over-all gross national product.

The second unusual aspect of the U.S. demand for imports in 1950 was, of course, the large volume of stockpiling and other inventory accumula-

tion. The influence of this factor on the rate of change in imports to be anticipated between 1950 and 1975 may best be illustrated by the Paley Commission's estimates for individual commodities. For example, although U.S. consumption of copper is expected to increase at an annual rate of 1.5 per cent, and domestic primary and secondary production at a rate of only 0.3 per cent, it will not be until 1954 or 1955 that the use of copper in production will be large enough to support the 1950 volume of net imports. The case of tin is even more striking: although the Paley Commission anticipated an increase of one per cent per year in U.S. consumption, it estimated 1975 U.S. imports at only 77 per cent of the abnormally high level of 1950.

The effects of durable goods production and of inventory accumulation in 1950 help to explain why U.S. imports are expected to increase more rapidly in the second half of the period under study (the years 1962–75) than in the first half (the years 1950–62). If imports were to increase throughout the entire period at the rate of the second half, the increase to be expected by 1975 would be $7.3 billion instead of the $6.6 billion actually predicted. According to either rate of increase, however, the ratio of imports to gross national product would be somewhat higher in 1975 than in the years 1947–49 when the particular abnormal conditions of 1950 were not present.

Of course, in view of the low level of Western European production in 1947 and of the recession in 1949, imports in those two years may have been somewhat below normal. Even so, the comparison of the estimate for 1975 with the figures for 1947–49 may offer some indication that in the very long run—after the effects of the abnormal durable goods production and inventory accumulation have been compensated for—the ratio of imports to gross national product will remain relatively constant and may actually cease to decline. The probability of this depends, of course, on the degree of confidence that can be placed in the Paley Commission's estimates of future shortages of various domestic U.S. resources. In any event, an eventual secular rise in the ratio of imports to gross national product does not appear likely.

Comparison with present and future dollar needs

A comparison of the predicted increase in U.S. merchandise imports with the current and future dollar requirements of the rest of the world has a definite economic meaning. Admittedly, it is impossible to assign a quantitatively precise economic definition to the concept of "dollar requirements", but a useful picture of the relationship between the projected rate of growth in U.S. imports and the rising dollar needs of the rest of the world can, nevertheless, be obtained by employing any un-

ambiguous and relatively simple definition. For the purposes of the present paper, normal current dollar requirements are arbitrarily defined as the average physical volume of goods and services purchased by foreign countries from the United States in the years 1949–51, while the increase in the world dollar supply necessary to maintain the average 1949–51 level of *per capita* purchases of nonmilitary merchandise in the United States is taken as a rough index of future dollar requirements.[7] The possible influence on the world dollar supply of changes in other items in the U.S. balance of payments can be largely disregarded because merchandise imports have accounted historically for about four fifths of the dollars earned by other countries.

Our estimates indicate that merchandise imports into the United States from foreign countries as a whole can be expected to rise at an annual rate of 2 per cent between 1949–51 and 1962 (Table 4). Because of an initial dollar gap, however, the rest of the world would be unable to increase the physical volume of its nonmilitary merchandise imports from the United States during this period if net dollar receipts from other sources did not increase or if there were no assistance in the form of grants or loans. By 1962, merchandise exports to the United States should have increased enough to support the 1949–51 level of nonmilitary merchandise imports from the United States without economic aid from that country, or without undue pressure upon the foreign exchange reserves of other countries.[8] Furthermore, since merchandise imports into the United States will then be rising at the higher rate of 2.6 per cent per year, foreign countries as a whole should be able to increase their nonmilitary merchandise imports from the United States at an annual rate of about 2.5 per cent between the years 1962 and 1975.

For the 25-year period as a whole, therefore, the rest of the world will probably be able to increase its nonmilitary merchandise imports from the United States to a volume 38 per cent greater than the 1949–51 average, or at an annual rate of 1.3 per cent. During the same period, the approximate rate of population growth in the rest of the world, weighted in accordance with the current shares of individual foreign regions in U.S. merchandise exports, is estimated at 1.2 per cent per year. Thus, even if net earnings from "invisible" transactions with the

[7] A definition of "future dollar requirements" in these terms is more closely related to a structural, than to a dynamic, concept of "dollar shortage" because the complex effects of economic growth on the dollar requirements of individual regions are disregarded. Under the per capita formulation used here, the "dollar gap" is roughly defined as the deficiency in the dollar supply necessary to prevent the structural changes wrought by the war from pushing living standards below a socially or politically undesirable minimum.

[8] However, since some IBRD or Export-Import Bank loans are likely to be continued, the rest of the world would, prior to 1962, probably be able to increase imports from the United States somewhat.

United States do not increase and there is no rise in U.S. private foreign investment, the additional dollars that the United States is likely to make available to the rest of the world through larger imports should be

TABLE 4. POSSIBLE IMPACT OF PROJECTED CHANGES IN OTHER REGIONS' MERCHANDISE EXPORTS TO THE UNITED STATES ON THEIR NONMILITARY MERCHANDISE IMPORTS FROM THE UNITED STATES, 1949–51 TO 1975[1]

(In percentage rates of growth)

	Estimated Annual Rate of Growth in Physical Volume of Merchandise Exports to United States	Resulting Possible Rate of Growth in Physical Volume of Nonmilitary Purchases in United States[2]
1949–51 to 1962		
All areas	2.0	0.0
Sterling area	1.0	0.6
United Kingdom and dependencies	0.7	1.1
Other sterling countries	1.2	−0.1
Continental OEEC countries and dependencies	2.0	−3.2
Latin American Republics	1.9	1.0
Canada	2.7	2.2
Other countries	2.1	0.2
1962 to 1975		
All areas	2.6	2.5
Sterling area	1.9	1.8
United Kingdom and dependencies	1.7	1.6
Other sterling countries	2.2	2.1
Continental OEEC countries and dependencies	2.2	2.0
Latin American Republics	2.5	2.7
Canada	2.7	2.2
Other countries	3.5	3.3
1949–51 to 1975		
All areas	2.3	1.3
Sterling area	1.5	1.2
United Kingdom and dependencies	1.2	1.4
Other sterling countries	1.7	1.1
Continental OEEC countries and dependencies	2.1	−0.8
Latin American Republics	2.2	1.9
Canada	2.7	2.2
Other countries	2.8	1.8

[1] Based on data in Table 12 of the Statistical Appendix.

[2] It is assumed that all of the increase in each region's merchandise exports to the United States is available to that region for nonmilitary purchases in the United States, and any possible changes in U. S. private foreign investment and in net dollar earnings from nonmerchandise transactions with the United States are neglected.

sufficient to achieve dollar balance—provided that the allocation of this increased supply of dollars among individual countries is satisfactory. This will depend, of course, on (1) the relationship between the anticipated increase in U.S. imports from each region and the magnitude of the existing dollar problem of that region, (2) the pattern of net interregional dollar payments, and (3) the size and direction of official loans and private foreign investment.

It is not, of course, strictly correct to speak only in terms of the physical volumes of exports and imports, for changes in the terms of trade, i.e., in the ratio between the prices of exports and imports, should not be neglected. Nevertheless, the conclusion reached above should hold true irrespective of any foreseeable changes in the terms of trade of the rest of the world with the United States. If these should show a long-run improvement from the point of view of the rest of the world, it would be correspondingly easier to achieve dollar balance, and, even if they should deteriorate by as much as 7 per cent, foreign countries as a group should still be able to increase the physical volume of their nonmilitary merchandise imports from the United States to the same extent that their populations increase.

Because of the varied nature of the U.S. economy, primary and manufactured products form a significant part of both U.S. exports and imports, and long-run changes in the U.S. terms of trade—contrasted with short-run changes reflecting temporary divergencies between world production and demand—tend to be quite small. Between 1929 and 1948–49, for example, there was no significant change in this important economic variable. Furthermore, the present paper's projections of the physical volume of U.S. imports are based on the explicit assumption that world production will increase sufficiently to satisfy world demand. A significant improvement in the terms of trade of the rest of the world with the United States will probably occur only if this assumption should prove to be unfounded; in that event, the betterment of foreign dollar positions resulting from the improved terms of trade would tend merely to compensate roughly for the smaller physical volume of the rest of the world's exports to the United States.

Some Regional Implications of the Anticipated Changes in Imports

The regional balance of payments implications of the changes that have been predicted in U.S. imports should be analyzed in two stages. First, the direct or primary impact of the estimated change in imports on each region's bilateral dollar relationship with the United States has to be determined. Only then can the discussion proceed to the second

stage—a consideration of the prospects of any region earning dollars indirectly from a country other than the United States and a determination of the need for certain regions to develop domestic or non-dollar substitutes for dollar imports. After all, the chances of any one region being able to increase its dollar earnings indirectly through trade with other regions are largely dependent on what can be expected to happen to the direct dollar exports of those other regions, while some indication of the relative magnitude and difficulty of the dollar-saving adjustments which a region might be forced to make in order to achieve dollar viability can be obtained from an appraisal of the outlook for its direct exports to the United States.

Primary impact on bilateral dollar relationships with the United States

Table 4 provides a tentative answer to the following question: Given the foregoing projections of the merchandise exports of the rest of the world to the United States and *neglecting all other possible changes in the dollar receipts of the rest of the world as a whole and in interarea dollar transfers*, at what rate could individual foreign regions afford to increase the physical volume of their nonmilitary merchandise imports from the United States over the 1949–51 level during the next 25 years? Clearly, these estimates are not projections of the actual changes in U.S. merchandise exports to be expected during the period or of the extent to which these exports may fall short of the level of dollar imports that individual regions think they may need. Rather, they should be considered as a useful device for indicating the approximate bilateral impact of the projected changes in U.S. imports on foreign dollar positions and for showing the *relative* magnitudes of the adjustment problems that foreign countries have to face.

An examination of the bilateral relationships of Canada and of "other countries" with the United States indicates that these two areas should be able to afford to increase their purchases in the United States at a fairly rapid rate (2.2 per cent and 1.8 per cent per year, respectively). For this reason, Canada and "other countries" could probably meet any reasonable future increases in their dollar needs without having to supplement the additional dollars earned from expanded levels of merchandise exports to the United States with increases in net dollar receipts from other regions. The indicated possible rate of increase for "other countries" must be interpreted with particular caution, however, because of the heterogeneous nature of the countries falling within this group. For those countries for which the outlook for merchandise exports to the United States is not especially favorable, the achievement of dollar balance will depend on the extent to which their imports of finished goods from Japan and Western Europe are increased.

For the Latin American countries there is an additional complicating factor. Although the indicated possible rate of increase in the physical volume of merchandise imports from the United States (1.9 per cent per year) is higher than for "other countries", the dollar needs of the Latin American countries may also be expected to increase at a significantly higher rate than those of "other countries". United Nations experts have estimated that the population of Latin America will rise at the very high annual rate of 2.25 per cent. Limited substitution of non-dollar for dollar imports in a few Latin American countries could, however, easily prevent the emergence of any serious long-run dollar problem.

The outlook for the sterling area is more difficult to evaluate on the basis of bilateral figures alone, for the sterling area dollar crisis of 1951–52 was caused, to a very large extent, by gold and dollar payments to areas other than the United States. If these payments to other areas could be eliminated, however, the indicated possible rate of increase (1.2 per cent per year) in the physical volume of merchandise imports from the United States appears more than sufficient to cover any rise in the dollar requirements of the sterling area that may result from population growth.

Some interesting developments can be anticipated in connection with the sources and disposition of funds in the sterling area dollar pool. During the period 1949–51 to 1962, the United Kingdom and its dependencies should, from a strictly bilateral point of view, be able to increase their nonmilitary merchandise imports from the United States by about 15 per cent. The independent sterling area countries, however, are likely to be unable to increase directly financed imports of this type over this period unless net dollar receipts from foreign investments or invisible transactions with the United States rise. At the same time, the increase in the dollar needs of the independent sterling area countries can be expected to be relatively rapid, since the Paley Commission estimated that the rate of population growth in Australia and New Zealand will exceed 1.9 per cent. After 1962, however, a greater degree of dollar balance will tend to be established within the sterling area: the United Kingdom and its dependencies ought to be able to increase the physical volume of their nonmilitary imports from the United States at an annual rate of 1.6 per cent between 1962 and 1975, while the independent countries of the sterling area should be able to raise theirs at an annual rate of 2.1 per cent.

The one group of nations for which the computations in Table 4 appear very unfavorable are the continental OEEC countries and their dependencies. This result is primarily a reflection of the large dollar gap which currently exists for this region. In spite of the indicated in-

crease of 2.1 per cent per year in the physical volume of their merchandise exports to the United States, the continental OEEC countries and their dependencies will apparently be able to finance directly in 1975 only four fifths of the 1949–51 average physical volume of nonmilitary merchandise imports from the United States, unless net dollar earnings from other sources also increase. If the 1949–51 volume of imports from the United States were to be maintained, however, the 1975 dollar gap would amount to only one quarter of the 1949–51 average.

Feasibility and magnitude of necessary secondary adjustments

In interpreting the figures for the continental OEEC countries and their dependencies, it should be recognized that, although it was assumed that the Western European countries would take certain steps to improve their dollar positions, the degree of domestic and external adjustment actually implied in the figures of Table 4 is quite moderate. It was assumed, for example, that fiscal and monetary policies which would ensure that their competitive position in the U.S. market did not worsen would be undertaken by the Western European countries, but no provision was made in the calculations for any fall in the relative prices of their products in the U.S. market as a result of more decisive fiscal and monetary action or of U.S. tariff reductions. Similarly, although it was assumed that the continental OEEC countries and their dependencies would act to prevent imports from the United States from rising above the 1949–51 average level, the possibility of a reduction in imports of grains and coal was not taken into account.[9]

Accordingly, it seems advisable to offer some quantitative indication of the bilateral dollar outlook for the continental OEEC countries and their dependencies in the event of more determined policies being pursued. Under this alternative formulation, the prices of Western European manufactured products in the U.S. market are assumed to fall at an annual rate of 0.5 per cent relative to competing U.S. goods; such a rate of decline is not altogether unlikely, given a favorable U.S. tariff policy. It is also assumed that the continental OEEC countries will be able to eliminate all imports of grain and coal from the United States during the period under review. The physical volume of merchandise exports to the United States would then grow at the higher rate of 2.5 per cent per year; and even if net dollar earnings from other sources did not rise and U.S. foreign aid was eliminated, the possible 1975 physical volume of merchandise imports from the United States would be about 10 per

[9] An increase of U.S. nonmerchandise imports should also contribute significantly to the closing of the "dollar gap"; the demand for such luxury-type services as tourism tends to rise rapidly when national income increases.

cent larger than in 1949–51—implying an annual rate of growth of 0.4 per cent over the period.[10]

Turning now to the possibility that the Western European countries might increase their net dollar earnings through trade with other areas, it should be pointed out that the same policies of self-help, which will improve the competitive position of the Western European countries in the U.S. market, will also tend to make their products more attractive to buyers in other countries. Given the expected rates of increase in the exports of other regions to the United States, however, and taking into account foreseeable rates of growth in the dollar import requirements of these regions, the chances of the continental OEEC countries significantly increasing their net indirect dollar earnings through trade with the sterling area and the majority of the Latin American countries appear rather limited. But larger sales in these areas could enable Western European countries to substitute purchases of non-dollar merchandise for dollar imports, thereby improving their dollar positions indirectly. Increased net indirect dollar earnings appear quite possible from Western European trade with Canada and, to a less extent, from trade with Venezuela, Cuba, and certain Middle Eastern countries. A pattern of trade in which the Western European countries earned U.S. dollars from Canada would, however, mark a radical reversal of past patterns; traditionally, Canada has earned U.S. dollars from her trade with Western Europe. In addition, Canada's relative share in the European market has increased considerably during the last two years.

Statistical Appendix

The figures for 1962 and 1975 which are used in this analysis are not to be interpreted as predictions of the actual levels of trade to be expected in those years. Following the usage of the Report of the President's Materials Policy Commission, the situation described with reference to 1975 should be considered as typical of the conditions that can be expected in the final year of a period in which the physical gross national product of the United States will grow to a volume twice that of 1950; the estimate given for 1962 should, similarly, be interpreted as representing the level of imports in some year approximately halfway through this period. The Paley Commission estimated that, unless the rate of growth of the U.S. economy is severely retarded by a major depression, gross national product will, at some time during the decade

[10] In determining the significance of this estimate for the balance of payments of the rest of the world as a whole with the United States, account would also have to be taken of the extent, if any, to which the increased OEEC exports would merely replace exports from other regions.

1970–80, probably be double what it was in 1950, the exact year depending on minor variations in the possible rate of growth of output per man-hour and on the extent to which changes occur in the length of the average work week.

Two further general comments are necessary to ensure a correct interpretation of the findings. First, although the statistical techniques used in work of this type necessarily yield numerically precise answers, the results should be interpreted merely as indications of the *relative* orders of magnitude of imports to be expected. Second, despite the large number of assumptions that had to be made, it became increasingly clear in the preparation of the estimates that even relatively large differences in the projections for major commodities did not alter or obscure certain basic trends and regional patterns that clearly emerged.

Imports of crude and semimanufactured materials

Wherever possible, an attempt was made to utilize the estimates of total imports of individual commodities given in the Report of the Paley Commission. For this reason, the underlying assumptions of that Report (doubling of U.S. physical gross national product and a 27 per cent rise in U.S. population by 1975) were used in making the projections for all other types of imports. Actual imports in 1950 of the commodities selected are shown in Table 5; these commodities accounted for 57 per cent of imports of crude and semimanufactured materials in that year.

To obtain the estimates of imports of the "Paley commodities" for 1962 and 1975, which are given in Tables 6 and 7, the figures for imports from all areas, similar to those in the Paley Report, were secured in terms of 1950 dollars; in order to make the figures based on the Paley Commission estimates, which are on a *net import* basis, comparable with the Department of Commerce import data for 1950, some minor adjustments were necessary.

To secure the regional classifications, the import values for 1950 were projected forward as a first approximation of the situation to be expected in 1962 and 1975. These were then adjusted to take account of such anticipated changes in production or trading patterns as were deemed necessary; these adjustments were made on the basis of information obtained from the Paley Report and from discussions with commodity specialists.

Imports in 1950 of those crude and semimanufactured materials that were not covered by the Paley Report are presented in Table 8, together with the total figures for the "Paley commodities" that are given in Table 5. The 1962 and 1975 estimates for these commodities are given in Tables 9 and 10. For burlap and jute, and for wool, separate estimates

TABLE 5. VALUE OF U.S. IMPORTS OF SELECTED CRUDE AND SEMIMANUFACTURED MATERIALS BY REGIONS, 1950[1]

(In millions of 1950 U.S. dollars)

	Sterling Area				Continental OEEC Countries						
	United Kingdom	Sterling area dependencies	Other sterling area countries	Total	OEEC countries	OEEC dependencies	Total	Latin American Republics	Canada	Other Countries	All Areas
Aluminum	0.6	0.7	—	1.3	14.0	13.5	27.5	—	42.9	6.9	78.6
Antimony	0.1	—	—	0.1	0.7	—	0.7	2.6	—	0.5	3.9
Asbestos	—	3.4	2.1	5.5	—	0.1	0.1	—	41.4	0.1	47.1
Beryllium	—	0.1	0.4	0.5	—	0.1	0.1	0.6	—	—	1.2
Bismuth	—	—	—	—	—	—	—	0.7	0.4	0.2	1.3
Cadmium	—	—	—	—	0.6	—	0.6	1.5	0.5	0.4	3.0
Chromium	—	3.6	3.6	7.2	8.3	1.7	10.0	1.5	4.2	4.9	27.8
Cobalt	—	—	—	—	4.7	8.5	13.2	—	—	—	13.2
Copper	0.3	21.6	2.9	24.8	4.5	0.1	4.6	149.6	31.7	22.6	233.3
Fluorspar	—	—	—	—	0.8	—	0.8	0.9	0.4	0.5	2.6
Industrial diamonds	1.6	0.2	21.7	23.5	0.6	10.4	11.0	0.6	0.2	—	35.3
Iron ore	—	1.6	—	1.6	13.5	3.5	17.0	11.9	12.7	0.5	43.7
Lead	0.7	—	13.1	13.8	3.1	1.0	4.1	72.8	29.4	15.8	135.9
Manganese	—	8.2	23.4	31.6	12.3	1.1	13.4	6.3	3.3	3.7	58.3
Mercury	—	—	—	—	0.9	—	0.9	0.2	—	1.6	2.7
Mica	0.2	0.2	20.6	21.0	—	0.5	0.5	1.9	0.1	—	23.5
Newsprint and woodpulp	—	—	—	—	44.2	—	44.2	—	618.6	29.6	692.4
Nickel	0.2	—	—	0.2	3.4	—	3.4	—	73.3	—	76.9
Petroleum products	—	5.0	43.7	48.7	—	157.5	157.5	354.1	0.3	24.1	584.7
Quartz crystals	—	—	—	—	—	—	—	0.6	—	—	0.6
Rubber	1.3	210.4	41.8	253.5	0.7	12.6	13.3	1.8	0.4	195.4	464.4
Tin	16.5	96.9	0.3	113.7	31.2	5.6	36.8	26.9	0.2	24.9	202.5
Tungsten	0.3	—	0.5	0.8	0.3	0.1	0.4	3.3	—	10.7	15.2
Zinc	0.2	—	—	0.2	5.5	—	5.5	17.6	39.9	1.6	64.8
Total	22.0	351.9	174.1	548.0	149.3	216.3	365.6	655.4	899.9	344.0	2,812.9

[1] Based on data from U.S. Department of Commerce, Foreign Trade Reports 110.

TABLE 6. ESTIMATED VALUE OF U.S. IMPORTS OF SELECTED CRUDE AND SEMIMANUFACTURED MATERIALS BY REGIONS, 1962[1]

(In millions of 1950 U.S. dollars)

[1] Based on data from U.S. Department of Commerce, Foreign Trade Reports 110.

TABLE 6. ESTIMATED VALUE OF U.S. IMPORTS OF SELECTED CRUDE AND SEMIMANUFACTURED MATERIALS BY REGIONS, 1962[1]

(In millions of 1950 U.S. dollars)

	Sterling Area				Continental OEEC Countries						
	United Kingdom	Sterling area dependencies	Other sterling area countries	Total	OEEC countries	OEEC dependencies	Total	Latin American Republics	Canada	Other Countries	All Areas
Aluminum	0.7	4.3	—	5.0	14.0	20.7	34.7	0.3	76.8	12.3	129.1
Antimony	0.1	—	—	0.1	0.5	—	0.5	1.8	—	0.3	2.7
Asbestos	—	4.0	2.7	6.7	1.6	0.2	1.8	0.3	48.6	1.5	58.9
Beryllium	0.2	0.1	0.3	0.6	—	0.1	0.1	0.5	0.1	—	1.3
Bismuth	0.2	—	—	0.2	0.1	—	0.1	0.9	0.4	0.2	1.8
Cadmium	0.2	—	—	0.2	1.9	—	1.9	3.2	1.1	0.8	7.2
Chromium	—	3.7	3.7	7.4	8.8	1.7	10.5	1.5	4.4	5.2	29.0
Cobalt	—	—	—	—	10.7	19.3	30.0	—	—	—	30.0
Copper	30.7	21.5	7.4	59.6	28.7	6.3	35.0	150.7	31.9	19.2	296.4
Fluorspar	—	—	—	—	0.8	—	0.8	1.0	0.4	0.5	2.7
Industrial diamonds	2.3	0.3	31.0	33.6	0.9	15.0	15.9	0.6	0.2	—	50.3
Iron ore	—	1.6	—	1.6	13.5	3.5	17.0	91.1	55.2	4.7	169.6
Lead	0.9	—	13.2	14.1	3.0	1.9	4.9	73.4	29.2	15.9	137.5
Manganese	—	10.3	26.5	36.8	12.4	1.4	13.8	10.8	4.4	4.6	70.5
Mercury	—	—	—	—	0.8	—	0.8	0.1	—	1.4	2.3
Mica	—	—	—	—	0.1	—	0.1	—	0.1	—	0.2
Newsprint and woodpulp	—	—	—	—	57.3	—	57.3	—	801.9	38.4	897.6
Nickel	1.3	—	2.3	3.6	4.5	1.6	6.1	10.1	93.3	—	113.1
Petroleum products	1.4	5.0	79.2	85.6	2.7	157.7	160.4	467.6	118.8	206.0	1,038.4
Quartz crystals	—	—	—	—	—	—	—	—	—	—	—
Rubber	2.8	145.1	28.2	176.1	3.6	8.1	11.7	1.9	3.4	136.0	329.1
Tin	12.1	67.2	0.3	79.6	21.4	3.8	25.2	18.5	0.3	16.6	140.2
Tungsten	0.3	—	0.6	0.9	0.8	0.1	0.9	3.5	0.6	7.7	13.6
Zinc	1.8	—	3.1	4.9	7.9	2.3	10.2	22.5	50.2	2.2	90.0
Total	55.1	263.1	198.5	516.7	196.0	243.7	439.7	860.3	1,321.4	473.5	3,611.6

[1] For a description of the estimates, see text.

TABLE 7. ESTIMATED VALUE OF U.S. IMPORTS OF SELECTED CRUDE AND SEMIMANUFACTURED MATERIALS BY REGIONS, 1975[1]

(In millions of 1950 U.S. dollars)

	Sterling Area				Continental OEEC Countries						
	United Kingdom	Sterling area dependencies	Other sterling area countries	Total	OEEC countries	OEEC dependencies	Total	Latin American Republics	Canada	Other Countries	All Areas
Aluminum	0.7	10.0	—	10.7	14.0	32.4	46.4	0.3	129.2	20.7	207.3
Antimony	0.1	—	—	0.1	0.7	—	0.7	2.8	—	0.5	4.1
Asbestos	—	4.9	3.2	8.1	1.6	0.3	1.9	0.3	59.6	1.6	71.5
Beryllium	0.2	0.2	0.5	0.9	—	0.2	0.2	0.1	0.7	—	1.9
Bismuth	0.3	—	—	0.3	0.1	—	0.1	1.3	0.7	0.3	2.7
Cadmium	0.2	—	—	0.2	3.1	—	3.1	6.3	2.1	1.6	13.3
Chromium	—	5.6	5.6	11.2	12.9	2.6	15.5	1.9	5.2	7.7	41.5
Cobalt	—	—	—	—	19.8	35.7	55.5	—	—	—	55.5
Copper	30.8	35.0	9.0	74.8	29.5	20.5	50.0	247.0	52.3	25.0	449.1
Fluorspar	—	—	—	—	1.0	—	1.0	1.1	0.5	0.6	3.2
Industrial diamonds	3.0	0.4	39.9	43.3	1.2	19.2	20.4	0.6	0.2	—	64.5
Iron ore	—	1.6	—	1.6	13.5	3.5	17.0	200.0	109.9	10.0	338.5
Lead	1.0	—	21.2	22.2	4.0	5.0	9.0	116.0	46.6	22.3	216.1
Manganese	—	13.7	31.7	45.4	12.4	1.8	14.2	18.0	5.9	6.2	89.7
Mercury	—	—	—	—	0.9	—	0.9	0.2	—	1.5	2.6
Mica	—	—	—	—	0.1	—	0.1	—	0.1	—	0.2
Newsprint and woodpulp	—	—	—	—	77.4	—	77.4	—	1,082.6	51.8	1,211.8
Nickel	1.3	—	7.0	8.3	6.3	5.0	11.3	10.1	130.9	—	160.6
Petroleum products	1.4	5.0	179.8	186.2	2.7	157.7	160.4	740.9	175.0	716.8	1,979.3
Quartz crystals	—	—	—	—	—	—	—	—	—	—	—
Rubber	2.7	131.9	25.6	160.2	3.6	7.4	11.0	1.8	3.4	123.7	300.1
Tin	13.3	74.2	0.3	87.8	23.7	4.2	27.9	20.5	0.3	18.3	154.8
Tungsten	0.3	—	0.6	0.9	0.8	0.1	0.9	3.5	0.6	6.2	12.1
Zinc	1.9	—	6.5	8.4	10.9	7.0	17.9	31.6	71.3	3.3	132.5
Total	57.2	282.5	330.9	670.6	240.2	302.6	542.8	1,404.3	1,877.1	1,018.1	5,512.9

[1] For a description of the estimates, see text.

TABLE 8. VALUE OF TOTAL U.S. IMPORTS, BY REGIONS, 1950[1]

TABLE 8. VALUE OF TOTAL U.S. IMPORTS, BY REGIONS, 1950[1]

(In millions of 1950 U.S. dollars)

	Sterling Area				Continental OEEC Countries						
	United Kingdom	Sterling area dependencies	Other sterling area countries	Total	OEEC countries	OEEC dependencies	Total	Latin American Republics	Canada	Other Countries	All Areas
"Paley commodities"	22.0	351.9	174.1	548.0	149.3	216.3	365.6	655.4	899.9	344.0	2,812.9
Burlap and jute	2.3	—	109.2	111.5	11.3	0.1	11.4	0.1	1.1	3.7	127.8
Wool	5.1	0.9	181.9	187.9	8.2	—	8.2	187.4	1.8	31.9	417.2
Other crude and semimanufactured materials	67.9	59.9	132.0	259.8	236.4	15.8	252.2	296.7	422.1	388.4	1,619.2
Total crude and semimanufactured materials	97.3	412.7	597.2	1,107.2	405.2	232.2	637.4	1,139.6	1,324.9	768.0	4,977.1
Bananas	—	0.1	—	0.1	—	—	—	55.7	—	—	55.8
Cocoa	—	75.7	0.4	76.1	—	3.2	3.2	83.1	—	4.8	167.2
Coffee	—	12.0	0.5	12.5	—	22.9	22.9	1,044.9	—	9.9	1,090.2
Tea	—	0.1	43.1	43.2	—	2.0	2.0	0.2	—	8.6	54.0
Other crude foodstuffs	0.6	27.5	39.5	67.6	13.5	6.6	20.1	58.3	208.2	24.3	378.5
Total crude foodstuffs	0.6	115.4	83.5	199.5	13.5	34.7	48.2	1,242.2	208.2	47.6	1,745.7
Sugar	—	—	—	—	—	—	—	330.5	—	49.7	380.2
Other manufactured foodstuffs	66.4	—	14.1	80.5	89.3	—	89.3	100.1	135.6	118.2	523.7
Total manufactured foodstuffs	66.4	—	14.1	80.5	89.3	—	89.3	430.6	135.6	167.9	903.9
Finished manufactures	173.3	—	25.1	198.4	395.2	—	395.2	49.6	285.7	178.7	1,107.6
Total imports	337.6	528.1	719.9	1,585.6	903.2	266.9	1,170.1	2,862.0	1,954.4	1,162.2	8,734.3

[1] Based on data from U.S. Department of Commerce, Foreign Trade Reports 110, and John H. Adler, Eugene R. Schlesinger, and Evelyn van Westerborg, *The Pattern of United States Import Trade Since 1923: Some New Index Series and their Application* (Federal Reserve Bank of New York, May 1952).

TABLE 9. ESTIMATED VALUE OF TOTAL U.S. IMPORTS, BY REGIONS, 1962[1]

(In millions of 1950 U.S. dollars)

	Sterling Area				Continental OEEC Countries						
	United Kingdom	Sterling area dependencies	Other sterling area countries	Total	OEEC countries	OEEC dependencies	Total	Latin American Republics	Canada	Other Countries	All Areas
"Paley commodities"	55.1	263.1	198.5	516.7	196.0	243.7	439.7	860.3	1,321.4	473.5	3,611.6
Burlap and jute	2.3	—	109.2	111.5	11.3	0.1	11.4	0.1	1.1	3.7	127.8
Wool	5.6	1.0	201.1	207.7	8.9	—	8.9	207.4	2.0	35.3	461.3
Other crude and semimanufactured materials	84.2	82.3	181.6	348.1	293.1	19.6	312.7	388.1	595.1	481.0	2,125.0
Total crude and semimanufactured materials	147.2	346.4	690.4	1,184.0	509.3	263.4	772.7	1,455.9	1,919.6	993.5	6,325.7
Bananas	—	0.1	—	0.1	—	—	—	61.6	—	—	61.7
Cocoa	—	83.8	0.4	84.2	—	3.6	3.6	91.9	—	5.3	185.0
Coffee	—	14.8	0.6	15.4	—	28.2	28.2	1,287.4	—	12.2	1,343.2
Tea	—	0.1	45.5	45.6	—	2.1	2.1	0.2	—	9.3	57.2
Other crude foodstuffs	0.7	31.8	45.7	78.2	15.6	7.6	23.2	67.4	240.9	28.1	437.8
Total crude foodstuffs	0.7	130.6	92.2	223.5	15.6	41.5	57.1	1,508.5	240.9	54.9	2,084.9
Sugar	—	—	—	—	—	—	—	442.7	—	53.2	495.9
Other manufactured foodstuffs	80.1	—	17.0	97.1	107.8	—	107.8	120.8	163.6	142.7	632.0
Total manufactured foodstuffs	80.1	—	17.0	97.1	107.8	—	107.8	563.5	163.6	195.9	1,127.9
Finished manufactures	241.8	—	35.0	276.8	551.3	—	551.3	69.2	398.6	249.3	1,545.2
Total imports	469.8	477.0	834.6	1,781.4	1,184.0	304.9	1,488.9	3,597.1	2,722.7	1,493.6	11,083.7

[1] For a description of the estimates, see text.

TABLE 10. ESTIMATED VALUE OF TOTAL U.S. IMPORTS, BY REGIONS, 1975[1]

(In millions of 1950 U.S. dollars)

[1] For a description of the estimates, see text.

TABLE 10. ESTIMATED VALUE OF TOTAL U.S. IMPORTS, BY REGIONS, 1975[1]

(In millions of 1950 U.S. dollars)

	Sterling Area				Continental OEEC Countries						
	United Kingdom	Sterling area dependencies	Other sterling area countries	Total	OEEC countries	OEEC dependencies	Total	Latin American Republics	Canada	Other Countries	All Areas
"Paley commodities"	57.2	282.5	330.9	670.6	240.2	302.6	542.8	1,404.9	1,876.5	1,018.1	5,512.9
Burlap and jute	2.3	—	109.2	111.5	11.3	0.1	11.4	0.1	1.1	3.7	127.8
Wool	6.5	1.1	230.4	238.0	10.4	—	10.4	238.0	2.3	40.5	529.2
Other crude and semimanufactured materials	109.0	116.9	257.2	483.1	379.5	25.4	404.9	527.7	860.2	623.6	2,899.5
Total crude and semimanufactured materials	175.0	400.5	927.7	1,503.2	641.4	328.1	969.5	2,170.7	2,740.1	1,685.9	9,069.4
Bananas	—	0.1	—	0.1	—	—	—	70.7	—	—	70.8
Cocoa	—	96.1	0.5	96.6	—	4.1	4.1	105.5	—	6.1	212.3
Coffee	—	19.0	0.8	19.8	—	36.4	36.4	1,658.8	—	15.7	1,730.7
Tea	—	0.1	49.3	49.4	—	2.3	2.3	0.2	—	9.8	61.7
Other crude foodstuffs	0.8	38.4	55.2	94.4	18.9	9.2	28.1	81.4	290.9	33.9	528.7
Total crude foodstuffs	0.8	153.7	105.8	260.3	18.9	52.0	70.9	1,916.6	290.9	65.5	2,604.2
Sugar	—	—	—	—	—	—	—	614.7	—	58.5	673.2
Other manufactured foodstuffs	101.2	—	21.5	122.7	136.1	—	136.1	152.6	206.6	180.1	798.1
Total manufactured foodstuffs	101.2	—	21.5	122.7	136.1	—	136.1	767.3	206.6	238.6	1,471.3
Finished manufactures	346.6	—	50.2	396.8	790.4	—	790.4	99.2	571.4	357.4	2,215.2
Total imports	623.6	554.2	1,105.2	2,283.0	1,586.8	380.1	1,966.9	4,953.8	3,809.0	2,347.4	15,360.1

[1] For a description of the estimates, see text.

were made; imports of burlap and jute were projected at the 1950 level, while no rise between 1950 and 1975 in per capita wool imports was anticipated. Imports of all other crude and semimanufactured materials were projected on the basis of the regional "industrial production elasticities" contained in a study of U.S. imports published by the Federal Reserve Bank of New York;[11] they were applied to the estimate of U.S. industrial production described below.

Industrial production projection

In order to project the level of imports of those crude and semimanufactured materials not individually analyzed, it was necessary to project the level of U.S. industrial production. The forecast of industrial production had to be made consistent with the Paley Commission's projection of a 100 per cent increase in the gross national product between 1950 and 1975. The Commission's estimates of 1975 output in various industries was taken as being "typical" of increased activity in various major sectors of the economy, and these rates of increase were then weighted in accordance with the approximate importance of each of these sectors in the make-up of the index of industrial production of the Board of Governors of the Federal Reserve System (Table 11).

TABLE 11. ESTIMATED INCREASE IN U.S. INDUSTRIAL PRODUCTION[1]

	Approximate Percentage Weight in Industrial Production Index	Approximate Percentage Increase from 1950 to 1975
Iron and steel	14	59
Producers' durables	11	50
Consumers' durables	7	40
Aircraft manufacturing	3	400
Other transportation equipment	6	50
Food and beverages	11	80
Printing and publishing	8	75
Petroleum products	11	110
Chemicals	8	125
Metals	4	50
Coal mining	2	56
Rubber goods	1	89
Other	14	100

[1] For discussion of the method followed to obtain these data, see text.

This method yielded an estimated increase in industrial production of

[11] J. H. Adler, E. R. Schlesinger, and E. van Westerborg, *The Pattern of United States Import Trade Since 1923: Some New Index Series and Their Application* (Federal Reserve Bank of New York, May 1952).

87 per cent between 1950 and 1975. This figure was checked with specialists on the index of industrial production, who agreed that a future doubling of the U.S. gross national product will probably be associated with an 85–90 per cent rise in industrial production.

Imports of foodstuffs

As a preliminary step, imports of all foodstuffs were assumed to increase at the same rate as the U.S. population, which, it will be recalled, the Paley Commission estimated would be 27 per cent larger in 1975 than in 1950. Changes in per capita imports were then projected on the basis of past trends[12] and of discussions with commodity specialists. On this basis, no rise in the per capita consumption of bananas and cocoa is anticipated; per capita consumption of tea is expected to decline 10 per cent by 1975, while that of coffee is likely to increase by 25 per cent, and that of all other imports of crude foodstuffs to increase by 10 per cent.

Per capita imports of manufactured foodstuffs other than sugar are assumed to increase by 20 per cent. No rise in the per capita consumption of sugar is anticipated, but the level of future sugar imports will be influenced greatly by what happens to U.S. continental production. It has been assumed that U.S. continental sugar production will not increase above present levels. Unless there is a marked change in the U.S. sugar quota system, this would mean that about three quarters of the 27 per cent increase in U.S. sugar consumption will come from Cuba, and the rest from the U.S. territories and the Philippine Republic.

Imports of finished manufactures

Imports of finished manufactures were projected on the basis of the findings of the Federal Reserve Bank's study mentioned above. The "rules" of behavior for manufactured imports from the Western European countries were applied to imports of this class from all other regions. The estimates shown in Tables 9 and 10 are based solely on the income elasticity[13] coefficient of the Federal Reserve Bank's study, for it was assumed that there would be no change in relative prices. However, whenever the possible quantitative effects of relative price changes are discussed in this paper, the results are also based on the price elasticity[14] coefficient of the Federal Reserve Bank's study.

[12] Cf. U.S. Bureau of Agricultural Economics, *Consumption of Food in the United States, 1909–1948* (Washington, August 1949 and September 1950).

[13] The income elasticity of the demand for imports measures the percentage change in the physical volume of imports associated with a percentage change in real national income or gross national product.

[14] The price elasticity of the demand for imports measures the percentage change in the physical volume of imports associated with a percentage change in the prices of imports relative to the prices of other commodities.

TABLE 12. POSSIBLE IMPACT OF PROJECTED CHANGES FROM 1949–51 TO 1975 IN MERCHANDISE EXPORTS TO THE UNITED STATES ON NONMILITARY IMPORTS OF THE SUPPLYING AREAS[1] FROM THE UNITED STATES

(In millions of 1949–51 U.S. dollars)

	Sterling Area							
	U.K. and dependencies	Other sterling area countries	Total	Continental OEEC Countries and Dependencies	Latin American Republics	Canada	Other Countries	All Areas
1949–51 Average								
Merchandise exports to U.S.	918	760	1,678	1,366	3,050	1,936	1,312	9,342
Nonmilitary merchandise imports from U.S.	937	922	1,859	3,202	3,056	2,206	1,786	12,109
Other net dollar receipts from U.S.	75	31	106	276	−391	179	154	324
1962								
Estimated merchandise exports to U.S.	1,001	880	1,881	1,704	3,829	2,697	1,680	11,791
Other net dollar receipts from U.S.	75	31	106	276	−391	179	154	324
Total net dollar availabilities for merchandise purchases in U.S.	1,076	911	1,987	1,980	3,438	2,876	1,834	12,115
Possible directly financed nonmilitary purchases in U.S. (1949–51 = 100)	115%	99%	107%	62%	113%	130%	103%	100%
1975								
Estimated merchandise exports to U.S.	1,249	1,167	2,416	2,296	5,280	3,773	2,650	16,415
Other net dollar receipts from U.S.	75	31	106	276	−391	179	154	324
Total net dollar availabilities for merchandise purchases in U.S.	1,324	1,198	2,522	2,572	4,889	3,952	2,804	16,739
Possible directly financed nonmilitary purchases in U.S. (1949–51 = 100)	141%	130%	136%	80%	160%	179%	157%	138%

[1] On the basis of purely bilateral relationships; for explanatory notes, see text.

Possible growth of U.S. nonmilitary merchandise exports

The underlying figures for the estimated possible impact of the changes in the physical volume of other regions' merchandise exports to the United States on the physical volume of their directly financed purchases of nonmilitary merchandise in the United States are presented in Table 12. It is assumed that all of the increase in each region's merchandise exports to the United States is available to that region for nonmilitary purchases in the United States. Possible changes in U.S. foreign investment, in the terms of trade, and in net dollar receipts from nonmerchandise transactions are disregarded. "Other net dollar receipts from U.S." excludes official grants and net loan disbursements.

The Elasticity of U.S. Import Demand: A Theoretical and Empirical Reappraisal

Ta-Chung Liu*

Much useful research, both empirical and theoretical, has recently been undertaken on the elasticity of demand for imports. While so far the results have been mainly negative, considerable insight into this subject has been gained.[1]

All of the statistically derived demand functions for imports yield elasticity estimates that are exceedingly low, much lower than "informed opinion" would expect them to be. These surprisingly low estimates have stimulated many students to a rigorous examination, in relation to the least squares method of estimation, of the nature of the problem and of the data available for its solution. The main conclusion has been either that an estimate by the least squares method is impossible or that the results obtained are gross underestimates. This paper endeavors to show, however, that, at least for certain cases, such as imports of finished manufactures into the United States, meaningful estimates can be derived by the least squares method.

A Theoretical Analysis

The most important contributions to the critical examination of the least squares estimates of import demand have been made by Professor

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[1] Positive empirical contributions to the subject have been made by John H. Adler, Eugene R. Schlesinger, and Evelyn van Westerborg in *The Pattern of United States Import Trade Since 1923: Some New Index Series and Their Application* (Federal Reserve Bank of New York, May 1952); and by Arnold C. Harberger in "A Structural Approach to the Problem of Import Demand", American Economic Association, *Papers and Proceedings of the Sixty-Fifth Annual Meeting* (*American Economic Review*, Vol. XLIII, May 1953), pp. 148–66. The section on Empirical Findings in the present paper deals with one of the results of the study by Adler, Schlesinger, and van Westerborg.

Orcutt.[2] After summarizing his criticisms, we shall endeavor to show that, if his analysis is carried to its logical conclusion, one will find still in the least squares method more serious difficulties than he has indicated. The main part of this section, however, is devoted to a defense of this method against his criticisms.

Orcutt's criticisms of the least squares estimates

Orcutt points out first that no method of estimation and no amount of effort could yield a satisfactory estimate for the price elasticity of demand if, after parallel movements between income and prices have been allowed for, relative prices have in fact not changed sufficiently to exert an influence on imports. However, the relevant data for such a case simply do not exist, and there is no basis for any estimate. This is a point of fact which, for any given problem, can be verified. An estimate should be attempted only for cases where there has been a wide range of changes in relative prices, after allowing for parallel movements with income. Two such cases are dealt with in the second section of this paper.

Orcutt then gives four reasons why a least squares estimate would in any event necessarily yield an underestimate for the elasticity of demand. One of these reasons will be discussed in detail later. The others are that (1) a greater degree of error of observation is involved in prices and income than in quantities of imports; (2) low-elasticity products are more heavily weighted in historical data than high-elasticity products;[3] and (3) estimates obtained from data on year-to-year changes could not reveal the higher long-run elasticities. All these criticisms are valid. The fact that, as a result of these considerations, elasticities are likely to be underestimated does not, however, in itself preclude a useful attempt to derive a least squares estimate. Whether the attempt would be justified or not depends upon the result obtained. If a low figure of, say, 0.4 were obtained, it would not be very useful as an indication of the lower limit of the elasticity in question. A figure higher than unity would mean that the demand was confirmed as definitely elastic, and this would be useful information. The higher the figure obtained, the higher would be the lower limit to be placed on the probable figure of true elasticity.

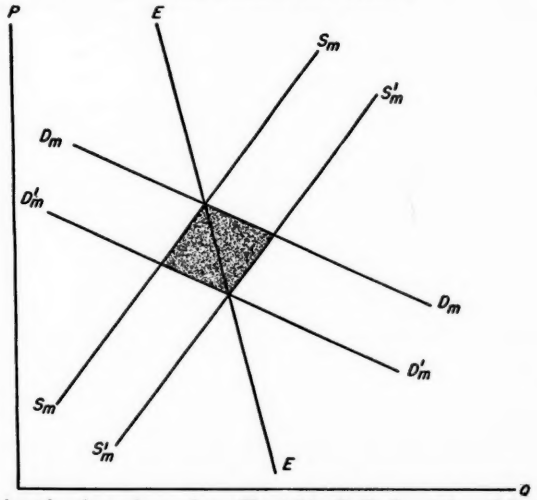
The discussion in Orcutt's paper of the shifts of the demand and the supply curves of imports needs to be examined in detail. Chart 1 has

[2] Guy H. Orcutt, "Measurement of Price Elasticities in International Trade", *The Review of Economics and Statistics*, Vol. XXXII (1950), pp. 117–32.

[3] Professor Arnold C. Harberger has made a more comprehensive examination of the aggregation problem in an unpublished paper, "Index Number Problems in Measuring the Elasticity of Demand for Imports". A review of his paper is found in Fritz Machlup's article, "Elasticity Pessimism in International Trade", *Economia Internazionale*, Vol. III (1950), pp. 118–41.

been drawn from Orcutt's Chart 3, which depicts the simultaneous shifts of the demand and the supply curves of imports *in the same direction*. Orcutt gives a number of reasons to explain why the demand curve for imports (a "derived demand" obtained by deducting domestic supply of the importing country from its total domestic demand) and the supply curve for imports (a "derived supply" obtained by deducting home demand in the supplying country from its total supply) tend to shift upward and downward together. The chart and the analysis

CHART 1. ORCUTT'S VERSION OF SIMULTANEOUS SHIFTS IN IMPORT DEMAND AND SUPPLY[1]



[1] This chart has been drawn from Chart 3 in G. H. Orcutt's article, "Measurement of Price Elasticities in International Trade", *The Review of Economics and Statistics*, Vol. XXXII (1950), pp. 117–32.

presented by him are applicable, strictly speaking, only to a situation where the product imported by Country 1 from Country 2 is homogeneous with a product produced in Country 1 itself and hence, abstracting from the exchange rate and the cost of movement, only one price rules in the markets of the two countries.

The following equations explain clearly the simultaneous shifts of the demand and the supply curves of imports by Country 1 from Country 2. Let D_1 and D_2 denote the quantities demanded of the product in the two countries, respectively; S_1 and S_2 represent the quantities supplied by the domestic producers of the two countries, respectively; Y_1 and Y_2

stand for real incomes; and P be the price of the product, deflated by the general price level. On the usual assumption that demand is a linear function of Y and P and that supply is a function of P, we have the equations listed below. (a, b, c, d, and e are constants. The u's, representing the influences of variables other than Y and P, would give rise to the "shifts" in the demand and the supply curves.)

Country 1		Country 2	
$D_1 = a_1Y_1 - b_1P + c_1 + u_{D_1}$	(1)	$D_2 = a_2Y_2 - b_2P + c_2 + u_{D_2}$	(2)
$S_1 = d_1P + e_1 + u_{S_1}$	(3)	$S_2 = d_2P + e_2 + u_{S_2}$	(4)

Country 1's demand for imports ("derived" from equations 1 and 3):

$$D_m = D_1 - S_1 = a_1Y_1 - (b_1 - d_1)P + (c_1 - e_1) + (u_{D_1} - u_{S_1}) \quad (5)$$

Supply of imports to Country 1 ("derived" from equations 2 and 4):

$$S_m = S_2 - D_2 = -a_2Y_2 + (d_2 + b_2)P + (e_2 - c_2) + (u_{S_2} - u_{D_2}) \quad (6)$$

The simultaneous shifts in the D_m and S_m functions *in the same direction*, pointed out by Orcutt, are brought about by certain patterns of change in the u's. If, for instance, there were an improvement in techniques of production in both Country 1 and Country 2, u_{S_1} and u_{S_2} would both be greater, D_m would be smaller, and S_m greater at the same values of Y_1, Y_2, and P. There would be a simultaneous shift of the D_m and S_m curves downward to D'_m and S'_m. On the other hand, if there were a general increase in the taste or preference for this product in the world, u_{D_1} and u_{D_2} would both become larger. As a result, D_m would be bigger, and S_m smaller, at the same values of Y_1, Y_2, and P. In terms of Chart 1, there would be a simultaneous shift of the D'_m and S'_m curves upward to D_m and S_m. As Orcutt has pointed out, these simultaneous shifts in the demand and the supply curves would result in an underestimate of the elasticity of demand by the least squares method as represented by the curve E. If the shifts were perfectly correlated, we would obtain a misleading underestimate with a unity correlation coefficient. Furthermore, even if the shifts were random (the D_m, D'_m, S_m, and S'_m curves may now be taken to represent the outside limits of the "shifting" positions, with points of intersections of the two curves scattered more or less evenly in the black area), an E curve which underestimated elasticity would still be obtained.

Orcutt's criticisms extended

If there were no difficulties in this situation other than those which Orcutt has pointed out, the complications raised by the simultaneous

shifts of the demand and supply curves would be no more serious than those resulting from the other three biases mentioned on p. 417, above; whether one could make a useful least squares estimate would again depend upon how high the estimate (known to be an underestimate) that is obtained may be. Following the same general approach used by Orcutt, one can, however, conceive many situations where the simultaneous changes in u_{D_1} and u_{D_2} (or in u_{S_1} and u_{S_2}) may not be in the same direction. For instance, the same industry may be a growing and progressive one in Country 1 but a deteriorating or dying one in Country 2. While u_{S_1} may increase during a given year, u_{S_2} may at the same time become smaller. Also, with Countries 1 and 2 at different stages of economic development, the demand for one type of goods may have passed its peak in Country 1 at the same time when Country 2 feels greater need for it. Hence u_{D_1} may increase at a time when u_{D_2} increases. All these changes may proceed during different years at irregular speeds, so that no statistically significant trend term in the demand or supply functions will take account of them. In such cases, the shifts in the D_m and S_m curves would be in the opposite directions; they would also not be random. In such a situation, we would not be sure at all whether the estimates were underestimates or overestimates.

When imports and nonhomogeneous home substitutes are considered, the demand and supply functions of imports can no longer be treated simply as "derived functions". More functions, more variables, and more "shifts" come into the picture. This is then the standard situation of a system of simultaneous equations in which the same variables enter into more than one relation. It is now well known that the least squares method of estimating one of the equations in isolation would not yield consistent estimates of the regression coefficients. It would be even more difficult to say whether a given least squares estimate is an underestimate or an overestimate. Here, then, we have a real problem of "identification". The method proposed by the Cowles Commission publications is designed to solve this difficulty; and recently an empirical study has been made which uses this approach.[4] The method, however, has its own theoretical limitations. In addition, there is the practical difficulty of obtaining "reduced form" relations of sufficiently high goodness of fit. The correlation coefficients of these relations are usually quite low, unless the number of "predetermined" variables included is too large for the number of observations. In either case, the "identified" regression coefficients would have large standard errors. It will, there-

[4] D. J. Morgan and W. J. Corlett, "The Influence of Price in International Trade: A Study in Method", *Journal of the Royal Statistical Society*, Series A, Vol. CXIV, Part III (1951), pp. 307–58.

fore, be some time before the difficulty can actually be resolved by any improvement in statistical techniques.

A defense of the least squares method

A re-examination of the nature of the historical data used in making the statistical estimates, however, raises doubts as to whether the difficulties arising from the simultaneous shifts in the demand and the supply curves of imports are really important or even relevant. There are strong reasons for believing that these difficulties need not really give us concern—at least in the case of aggregate demand functions for imports into a country such as the United States, of those finished manufactures for which there are no homogeneous domestic substitutes[5]—and that a least squares estimate of the demand function can be useful and meaningful. These conclusions are reached on the grounds, supported by some empirical evidence, that the shifts in the supply curves of imports are determined largely by the changes in the general price levels in the exporting countries and are therefore quite independent of the shifts in the demand curve of imports, and that the supply price is largely independent of the quantity imported.[6]

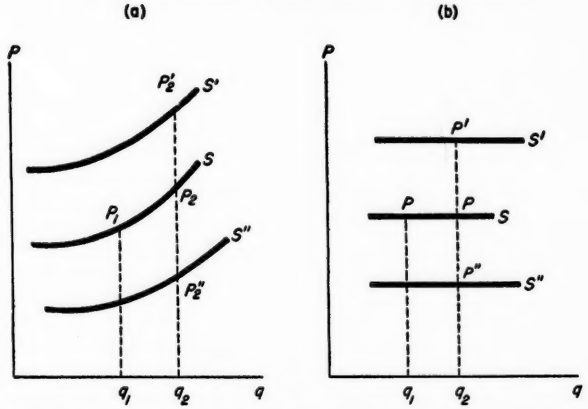
(1) Provided that many important factors are assumed to remain unchanged, one can usually draw a supply curve giving the relationship between the supply price and quantity produced, often an increasing function such as the S curve in section (a) of Chart 2. Thus, if the quantity produced changes from q_1 to q_2, the supply price will increase from P_1 to P_2. In fact, however, the prices of the raw materials and manufactured products purchased by suppliers change from year to year; so do the levels of wages paid by these suppliers. If, while q_1 changes to q_2, there is a rise in prices and wages that suppliers have to pay, the supply curve will shift upward and P_1 will rise to the higher point P'_2 instead of to P_2. On the other hand, P_1 will fall to P''_2, in spite of the increase in quantity, if, in the meantime, the prices and wages that the suppliers have to pay fall and the supply curve shifts downward.

[5] In contrast with most raw materials and foodstuffs.

[6] Adler, Schlesinger, and van Westerborg (*op. cit.*, p. 41) have also defended the least squares estimates of demand for imports of finished manufactures. They believe that " . . . there are certain instances where supply and demand changes are sufficiently independent of each other to enable the investigator to assume that a downward bias of the Orcutt type is operationally unimportant." No explanation, however, is given by them as to why and in what way the shifts in the demand and the supply curves are independent. Later on the same page they point out that " . . . the supply for the American market can be considered as almost perfectly elastic . . . ". Perfectly elastic supply and independent shifts are, however, quite different things. A least squares estimate would still be biased if the perfectly elastic supply curve shifts in the same direction as the demand curve.

When an aggregate supply function of some kind is considered, such as the supply function of exports as a whole or of a subclass of exports, the raw materials and the manufactured products the suppliers buy will cover a wide range of goods, and the shifts in the supply curves will be governed by the changes in the general price level (such as the wholesale price level) and the levels of wage rates in the respective industries. The general price level is largely determined by such broad factors as the relative magnitudes of aggregate money income and total real output. Wage levels in the different industries are determined mainly by the cost of living (another kind of general price level) and the relative bargaining strengths of managements and unions in the respective

CHART 2. CHANGES IN PRICE AND SHIFTS IN SUPPLY



fields. Hence the shifts in the supply curves are governed by factors that have no direct relationship with the quantities of output of the particular suppliers.

As can be seen from section (a) of Chart 2, whether the change in P is primarily dominated by movement along the curve or by the shifts of the curve depends upon the relative magnitudes of these two factors. During a period such as the past three decades, when there were, all the time, extensive upward and downward swings in the general price and wage levels, it would be reasonable to assume that the level of the supply price of exports was predominantly determined by the changing levels of prices and wages, the effects of the quantity of exports being rather unimportant. Some empirical evidence in support of this position is found in the fact that an almost perfect fit is found between the export price level (P_x) on the one hand, and the indices of wholesale price (P_w)

and the cost of living (P_{cl}) on the other, for the United Kingdom, as given in the following equation for the period 1930–51:

$$P_x = 0.488\,P_w + 1.20\,P_{cl} - 61.5 \qquad R = 0.988 \tag{7}$$

Undoubtedly, the fit would be even better if P_{cl} were replaced by an index of wage rates prevailing in the export industries. Given the wholesale price and the relevant wage levels at a given time, one can tell what the export price level is with almost complete accuracy without knowing anything about the quantity of exports. It might be thought that such a good correlation between P_x on the one hand and P_w and P_{cl} on the other is obtained only because P_w and P_{cl} are also highly correlated with the quantity of exports. This is not the case, as the correlation coefficient of the quantity of exports with P_w is only 0.46 and that with P_{cl} is only 0.49 for the same period of time.[7]

A similar relation is found for France for the period 1923–51, excluding the years 1939–45:

$$P_x = 1.01\,P_w + 15.75 \qquad R = 0.997 \tag{8}$$

The correlation coefficient of the quantity of exports with P_w is only 0.15 and that with P_x is 0.18.

(2) That the export price level can be determined without knowing the quantity of exports implies that the supply curve of exports is perfectly elastic, or nearly so, within a wide range around the quantities actually supplied. This situation is depicted in section (b) of Chart 2. The supply curves are horizontal at the different levels of export prices, which are determined by the general price and wage levels, around the quantities determined by the intersection of these shifting supply curves and the demand curves. The demand function will be discussed in detail later. We must first explain why the implied hypothesis of perfect elasticity of supply is reasonable, at least in the case of finished manufactures.

The price and quantity data used for estimating demand functions are annual averages. While in any given year a considerable change from the volume of exports in the preceding year may be observed, the change in the monthly rate may have been decisive only somewhere in the middle or the latter part of the year. The quantity of current output may indeed fall short of (or exceed) the demand from time to time; but within the next few months, these differences would be taken care of through adjust-

[7] The simple correlation coefficients of P_x with P_w and P_{cl} are, respectively, 0.982 and 0.985. The correlation coefficient between the quantity and the price of exports is 0.43.

ments in stocks without changing the rate of output. In fact, if the change in demand is temporary, there need not be any lasting effects at all. Hence, the inventory is the first cushion which tends to maintain perfect elasticity of supply within a range. The larger the inventory, the greater would be the cushion effect. Hence, for a small shift of the demand curve from one year to the next, the possibility of adjustments through stocks would by itself be sufficient to bring about an unchanged price for the different quantities in two successive years, if there were no substantial changes in the general price and wage levels.

When a longer period of time is allowed for the adjustment of supply to demand, there are, in the case of finished manufactures, two considerations in favor of high elasticities of supply. First, returns are more likely to be constant, regardless of the scale of operations, in manufacturing industries than in raw material industries, as in the former none of the factors of production, except perhaps entrepreneurship, is really fixed if sufficient time is allowed. Second, the well-known "kinked" demand curve facing an individual producer in an imperfect market will result in an unchanged price even when there is a substantial change in output brought about by a shift in the demand curve.[8] Furthermore, especially for finished manufactures, the volume of exports will be only a portion of total home production. The change in the volume of exports will be a still smaller portion of the total output; and the smaller the proportional change in output, the smaller will be the effects of such a change on prices. This factor takes on added force when the supply of exports to a given country (in contrast to the whole world) is considered, as the exports to a given country will be an even smaller portion of the total supply.[9]

In any case, historical evidence shows that the effects of changes in the general price and wage levels on the export price level tend to overwhelm whatever small effects the volume of exports and other factors may have on the export price level. This is, of course, not to deny the obvious fact that at times there would be a few export commodities the supply prices of which would be out of line with the general price level and the relevant wage levels. The supplies of these commodities might not be perfectly elastic within any important range of output. However, it is reasonable to believe, and the little empirical evidence we have presented tends to indicate, that the great majority of the prices of the components of an

[8] The "kinked" demand curves would result in a discontinuous marginal revenue curve. Hence, in spite of a shift of the demand curve, price may remain constant. See R. L. Hall and C. J. Hitch, "Price Theory and Business Behaviour", *Oxford Economic Papers*, No. 2 (1939), pp. 12–45.

[9] Adler, Schlesinger, and van Westerborg have also given the smallness of the ratio of exports to aggregate home production as the reason for the perfectly elastic supply of exports. See footnote 6.

aggregate export supply function would tend to follow the general price level. This is in fact a partial answer to the objections raised by Harberger and Machlup against estimating the elasticity of an aggregate function. Machlup's illustrations of absurd results were based on the assumption that the price movements of various components of the aggregate were very divergent.[10] If the movements of important sectors of the export price level in equation (1) should show a wide divergence, the chances are that the export price level could not be fitted so well with the average wholesale price and cost of living indices.

(3) From the standpoint of the importing countries, therefore, the import price level is primarily determined by the various general price levels in the exporting countries. It may be expected to undergo frequent and substantial shifts, fluctuating with the movements in the general price levels of the exporting countries and largely independently of the quantity of imports. For entirely similar reasons, the year-to-year changes in the general price levels (including wage levels) are by far the most important factor determining the aggregate price level of domestic substitutes for imported manufactures. One hears from time to time of isolated cases of deliberate price reductions by domestic suppliers to meet price reductions of competitive imported manufactures. Such evidence as there is, however, tends to show that these matching price changes are, *insofar as their position in the whole picture is concerned*, of very minor importance in the case of finished manufactures. Adler, Schlesinger, and van Westerborg have constructed a wholesale price index for a group of goods (P_s) which are as similar as possible to the finished manufactures imported from ERP countries (P_m). P_s is correlated with both the general wholesale price index in the United States (P) and P_m in the following equation, in order to obtain some indication of the relative influences of the last two on the first.

$$\underset{}{P_s} = \underset{(0.23)}{1.13\ P} + \underset{(0.24)}{0.35\ P_m} - 44.40 \qquad (9)$$

$$R = 0.974$$

While the influence of P on P_s is definitely significant, that of P_m on P_s is very uncertain. With a standard error as large as 0.24, compared with an estimated magnitude of 0.35 for the coefficient, the chances are not negligible that the true value of the coefficient is zero.

(4) We may therefore venture to say that both P_m and P_s, and the ratio $\frac{P_m}{P_s}$, are, in the case of finished manufactures, largely determined by the respective domestic price levels, and are quite independent of

[10] Fritz Machlup, *op. cit.*, p. 130.

the quantity of imports. In contrast to raw materials, where the demand for imports is some kind of "derived demand" (the difference between the importing country's total demand and domestic supply), the form of the demand function to be fitted statistically for imports of finished manufactures may reasonably be written in one of the following ways, with real income and various relative prices as independent variables:

$$m = ay - b\frac{P_m}{P_s} + c + u \tag{10}$$

$$m = ay - b\frac{P_m}{P} + c + u \tag{11}$$

Equation (10) should be used if the substitution effects are primarily limited to those between imports and close substitutes. If there are no close substitutes or if the substitution effects are more general, equation (11) may be preferable. Which equation is appropriate to a given situation is a problem to be determined on the basis of empirical evidence.[11] The important point is that P_m, P_s, and P are all determined independently of m, and may be considered as given values in equation (10) or (11).[12] In other words, the supply of m is perfectly elastic within a wide range around the current quantity. This horizontal "supply curve" would then fluctuate in accordance with the changes in $\frac{P_m}{P_s}$ or $\frac{P_m}{P}$ as determined primarily by the changes in the respective general price levels and wage levels. There is no longer any reason why these changes should be correlated with u, representing shifts in the demand curve after the effects of the changes in real income and relative prices are allowed for. This is quite different from the situation outlined on pp. 417–21, above, where the shifts $(u_{D_1} - u_{S_1})$ in the demand curve for imports (equation 5) and the shifts $(u_{S_2} - u_{D_2})$ in the supply curve for imports (equation 6) are likely to be brought about by the same set of factors and are therefore likely to be correlated with each other.

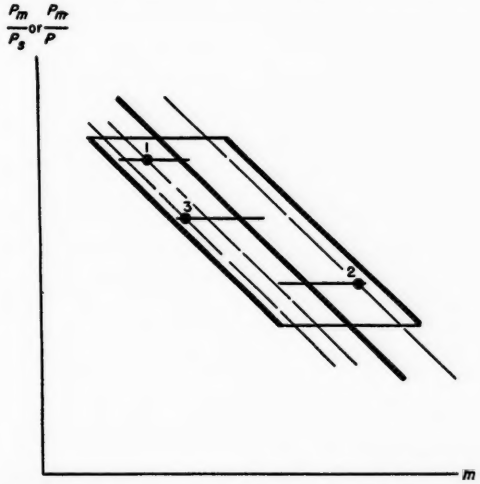
The new situation represented by equation (10) or (11) is described in Chart 3. The horizontal axis measures the quantity of imports after the income effects are allowed for. The "true" demand curve is repre-

[11] See pp. 429–33, below, for an empirical study of this problem.

[12] In terms of the Cowles Commission terminology, $\frac{P_m}{P_s}$ and $\frac{P_m}{P}$ may legitimately be considered as "predetermined variables" in equations (10) and (11). For imports into a country such as the United States, y may also be considered as a "predetermined variable". Hence the regression coefficients obtained by the least squares estimates are "consistent". The problem of "identification" does not arise.

sented by the solid line, with the "shifted positions" given by the broken lines. The points 1, 2, etc., give the historical quantity and price data in successive years. The rectangle represents the outer limit of the shifting demand and supply curves. Whether a satisfactory estimate of the demand function can be obtained depends upon whether there is a wide enough fluctuation in the price ratios and whether the variance of u is sufficiently small. The horizontal "supply curves" given in the chart would also save us from the embarrassment of necessarily obtaining an underestimate of the elasticity of the demand curve by the least squares

CHART 3. PERFECT ELASTICITY AND INDEPENDENT SHIFTS IN SUPPLY



method if the supply curves had finite elasticity. As explained by Chart 1, the estimated slope would be too steep even if the "shifts" in the demand and supply were random. As shown in Chart 3, the estimated slope obtained by the least squares method would be unbiased if the supply curves were perfectly elastic within a wide range and if the shifts in the supply curves were independent of the shifts in the demand curve.

Empirical Findings

In the light of the preceding theoretical discussion, it seems worth while to re-examine the least squares estimates of import demand for the cases where there is a reasonable chance of success. Such cases would include, for instance, the estimated demand functions for imports of

those finished manufactures whose prices did undergo considerable changes relative to prices and income in the importing country or relative to prices of competitive goods from other sources of supply. One such case is found in the recent estimate, by Adler, Schlesinger, and van Westerborg,[13] of the U.S. demand function for imports of finished manufactures from ERP countries.

Prewar period

The function as originally fitted for 1923-37 by Adler, Schlesinger, and van Westerborg is as follows:[14]

$$m = \underset{(0.39)}{1.66}\ gnp - \underset{(0.36)}{3.98}\ P'' + 352.5 \qquad (12)$$

$$R = 0.96$$

m: Quantity index of U.S. imports of finished manufactures from ERP countries, 1935–39 = 100

gnp: Index of U.S. real gross national product, 1935–39 = 100

P'': $\dfrac{P_m}{P + P_r + P_o}$, where P_m is the index of import prices of finished manufactures from ERP countries adjusted for duty payments (1935–39 = 100); P is the U.S. Bureau of Labor Statistics wholesale price index for finished manufactures (1935–39 = 100); P_r is the index of U.S. wholesale prices for finished manufactures reweighted to conform with the composition of imports of finished manufactures from ERP countries (1935–39 = 100); P_o is the index of prices adjusted for duty payments of U.S. imports of finished manufactures from origins other than ERP countries (1935–39 = 100).

The P'' term represents, of course, an attempt by the authors to derive a relative price series such that "... a fair representation of the most important pertinent price relationships has been achieved".[15] The denominator of P'', an unweighted average of three price indices, presumably covers the prices of both close and less close substitutes. The "average" price elasticity[16] (the regression coefficient of the P'' term multiplied by the ratio of the mean values of P'' and m) is as high as 2.38.

Three competing price indices enter into the denominator of P'' with

[13] *Op. cit.*, pp. 48–49.

[14] The standard errors of the regression coefficients have been computed on the basis of data kindly provided by the authors, and are given in parentheses under the respective regression coefficients.

[15] Adler, Schlesinger, and van Westerborg, *op. cit.*, p. 48.

[16] For a linear equation, such as equation (12), the "average" elasticity is not very instructive. See pp. 433 and 434, below.

equal weights. Weights, however, should be assigned to the different indices in accordance with their relative importance as explanatory variables for the movement in imports. For an aggregate of imports, it is quite impossible to decide on a priori grounds the relative importance of substitution with U.S. products or with products from other countries. Any one or two of the components of the denominator of the P'' index may not even have any significant bearing on the problem. It is possible (and, indeed, it turns out to be so in the present case) that the unweighted average of the three indices in the denominator of P'' would yield a correlation poorer than that obtained by using one price index only.

The only practical way to judge the relative importance of the influences of the three price ratios $\frac{P_m}{P}$, $\frac{P_m}{P_r}$, and $\frac{P_m}{P_o}$ on m during the period investigated is to include all these price ratios in the regression. Those that prove to be irrelevant or insignificant can then be dropped, and the reasons for their irrelevance and insignificance sought. If more than one significant ratio remains in the equation, the relative importance of their influences on imports during the period investigated would be indicated by the regression coefficients and the respective standard errors. If this is done, the following equation is obtained:

$$\underset{}{m} = \underset{(0.27)}{2.16\ gnp} - \underset{(0.89)}{0.57\frac{P_m}{P}} + \underset{(0.75)}{0.35\frac{P_m}{P_r}} - \underset{(0.23)}{2.36\frac{P_m}{P_o}} + 154.3 \qquad (13)$$

$$R = 0.982$$

The only significant price term is $\frac{P_m}{P_o}$. Hence $\frac{P_m}{P}$ and $\frac{P_m}{P_r}$ are dropped in turn in the following two equations. It is seen that, while $\frac{P_m}{P_r}$ has the "wrong" sign in equation (13), all signs in the following two equations are correct:

$$\underset{}{m} = \underset{(0.27)}{2.18\ gnp} - \underset{(0.52)}{0.23\frac{P_m}{P}} - \underset{(0.13)}{2.27\frac{P_m}{P_o}} + 145.3 \qquad (14)$$

$$R = 0.982$$

$$\underset{}{m} = \underset{(0.26)}{2.21\ gnp} - \underset{(0.44)}{0.04\frac{P_m}{P_r}} - \underset{(0.17)}{2.26\frac{P_m}{P_o}} + 121.6 \qquad (15)$$

$$R = 0.981$$

It is seen that the regression coefficients of *gnp* and $\frac{P_m}{P_o}$ are about the same in all three equations. Neither $\frac{P_m}{P}$ nor $\frac{P_m}{P_r}$ is significant, even after each is omitted in turn in equations (14) and (15). That these two terms did not have much "independent" influence on imports is clearly shown by the fact that the correlation coefficient remains as high as 0.981 after they are dropped:

$$m = \underset{(0.25)}{2.22\ gnp} - \underset{(0.13)}{2.27\ \frac{P_m}{P_o}} + 118.0 \qquad (16)$$

$$R = 0.981$$

The correlation coefficient in equation (16) is higher than that of the original Adler-Schlesinger-van Westerborg equation ($R = 0.96$ for equation 12). Thus, the inclusion of $\frac{P_m}{P}$ and $\frac{P_m}{P_r}$ in the relative price series actually results in a relation poorer than without them.

It is therefore seen that substitutions took place mainly between imports of finished manufactures from ERP countries and those from other countries. While these "other countries" include very few industrialized countries (Japan, Canada, Czechoslovakia, etc.), they supplied $161 million worth of finished manufactured goods to the United States in the prewar year 1937, a substantial amount in comparison with the $227 million worth of imports from the ERP countries.

The impression prevails that there is very little possibility of substitution between imports from these two groups of countries even though they all belong to the "finished manufactures" category. However, even a rough check of the detailed trade statistics in *Foreign Commerce and Navigation of the United States* reveals that this is not so. Perhaps 80 per cent of the U.S. imports from Czechoslovakia were finished manufactures; these alone accounted for $30 million in the total of $161 million cited above for the year 1937. Practically all of these items are substitutes for similar items from ERP countries. For both Japan and Canada, a very substantial number of items fulfill the following conditions: (1) they bear the same detailed import classification numbers as the corresponding items from ERP countries; (2) they are subject to the same rate of tariff as the corresponding ERP items; and (3) they represent substantial dollar values in comparison with the corresponding ERP items. These conditions indicate substitution possibilities.

One method of checking the validity of equation (16) is to find the relationship between imports of finished manufactures from these "other

countries" and the same independent variables used in equation (16), i.e., *gnp* and $\frac{P_m}{P_o}$. Since the coefficient of $\frac{P_m}{P_o}$ is significantly negative in equation (16), the coefficient of $\frac{P_m}{P_o}$ should be significantly positive in the new relationship if there is substitution between imports from these two sources. Such a result is obtained in the following relationship:

$$m_o = \underset{(0.213)}{1.127}\ gnp + \underset{(0.109)}{0.712}\frac{P_m}{P_o} - 73.4 \qquad (17)$$

$$R = 0.91$$

The fact that substitution effects between imports of ERP finished manufactures and U.S. domestic products did not play a visible role in the determination of these imports during 1923–37, however, does *not* necessarily mean that such substitutions would not be of importance in other periods. The lack of substitution between ERP finished manufactures and U.S. domestic goods during 1923–37 was mainly due to the fact that the price ratios $\frac{P_m}{P}$ and $\frac{P_m}{P_r}$ did not fluctuate sufficiently to bring such substitutions into play. This can be seen from a comparison of the small standard deviations, calculated as percentages of their respective means, of $\frac{P_m}{P}$ and $\frac{P_m}{P_r}$ with the standard deviation of $\frac{P_m}{P_o}$: for $\frac{P_m}{P}$, $\frac{4.73}{103.64}$ = 4.6 per cent; for $\frac{P_m}{P_r}$, $\frac{6.97}{97.27}$ = 7.2 per cent; for $\frac{P_m}{P_o}$, $\frac{18.00}{74.01}$ = 24.3 per cent.

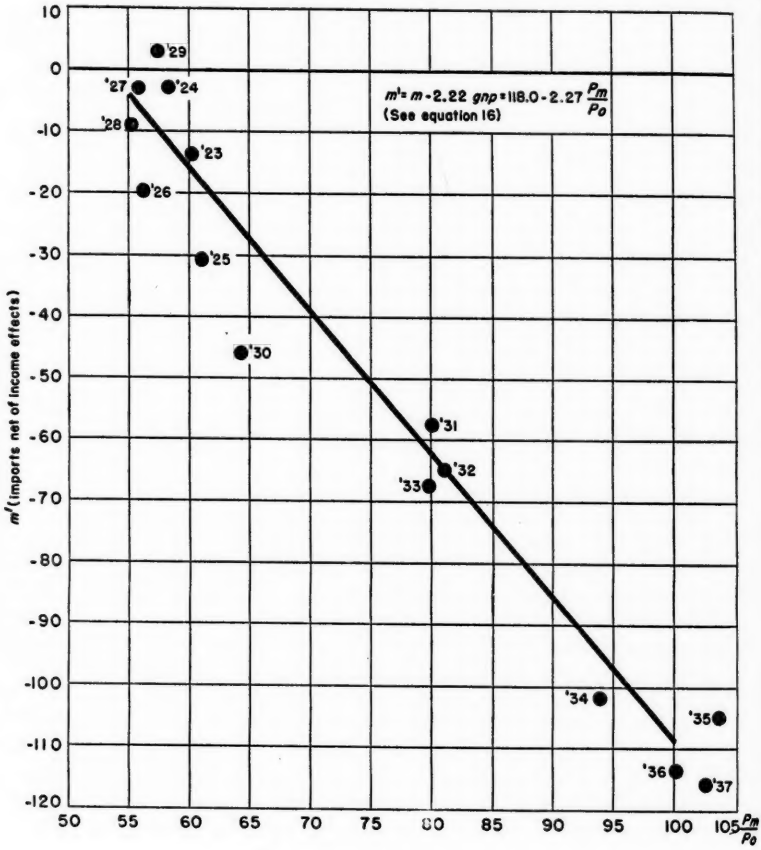
It may therefore be concluded that equation (16) merely confirms the existence of substitution between ERP manufactures and those from other origins; it does not disprove the possibility of substitution between ERP manufactures and U.S. domestic products. In fact, it will be shown later that there was some substitution of the latter kind during the postwar years.

The demand schedule of imports of finished manufactures from ERP countries with respect to the ratio of ERP prices to those of other countries, as implied in equation (16), is plotted in Chart 4. It relates the quantity of imports, net of income effects (i.e., $m' = m - 2.22\ gnp$), with $\frac{P_m}{P_o}$.

It is observed in Chart 4 that, from 1929 to 1937, there was a more or less consistent decline in imports of finished manufactures from ERP

countries, after allowance for income effects. It might be argued that this consistent decline is the manifestation of a trend through time and, therefore, that the "nice" negative correlation with the increasing price ratio $\frac{P_m}{P_o}$ is spurious. The suspected spuriousness cannot be proved or disproved by the statistical evidence presented here. Suffice it to say that it is rather difficult to explain the trend away from ERP finished

CHART 4. U.S. DEMAND FOR IMPORTS OF FINISHED MANUFACTURES FROM ERP COUNTRIES, 1923–37



manufactures except on the basis of the unfavorable price developments. It is also clear from the chart that the substitution of a trend term in place of $\frac{P_m}{P_o}$ in equation (16) would give an equation that would not provide so good a fit as equation (16).

The "average" elasticity of demand, as computed from equation (16), is only 1.13. This "average" figure, however, is not very instructive, since a linear relation such as equation (16) assumes a variable elasticity throughout the range of variations. The elasticity of demand for ERP finished manufactures with respect to the relative prices in the ERP and the "other countries" was as high as 2.76 in 1934 and as low as 0.56 in 1929. It was approximately 2 in 1937. The variations in the price elasticity during 1923–37 are plotted in Chart 5, together with the series for *gnp*, the quantity of imports (m), and the relative price ratio $\left(\frac{P_m}{P_o}\right)$.

Prewar and postwar period as a whole

While the ratio of import prices of finished manufactures from ERP countries to the prices of U.S. manufactured products did not fluctuate greatly in the prewar years, it did move with a considerable amplitude after the war. The movement of the relative price series $\frac{P_m}{P}$ is plotted in Chart 6.[17] The range of the changes in relative prices in the postwar years 1946–51 was certainly great enough to bring about substitutions between ERP and U.S. manufactures in the U.S. market, if such substitutions are possible at all. It is regrettable that figures for $\frac{P_m}{P_r}$ and $\frac{P_m}{P_o}$ (see equation 16) are not available for most of the postwar years, so that the following analysis has to be confined to the $\frac{P_m}{P}$ series.

The postwar data alone, however, are not sufficient to produce a reliable statistical equation. There would be a much larger number of observations to rely upon, if a way could be found to include both the prewar and the postwar data in one relationship. Such a method is suggested by Chart 7, which gives the scatter diagram between real *gnp* and the quantity of imports of finished manufactures (m) from the ERP countries. While there were several shifts in the relationship, especially a

[17] As explained on p. 428, above, P_m is after adjustment for duty payments. Since the data for 1949–51 provided by Adler, Schlesinger, and van Westerborg are before duty adjustments, an approximation to figures after adjustment for duty payments was obtained for those years on the basis of the ratio of before-and-after duty figures for 1948.

CHART 5. PRICE ELASTICITY OF U.S. DEMAND FOR IMPORTS OF FINISHED MANUFACTURES FROM ERP COUNTRIES WITH RESPECT TO $\frac{P_m}{P_o}$

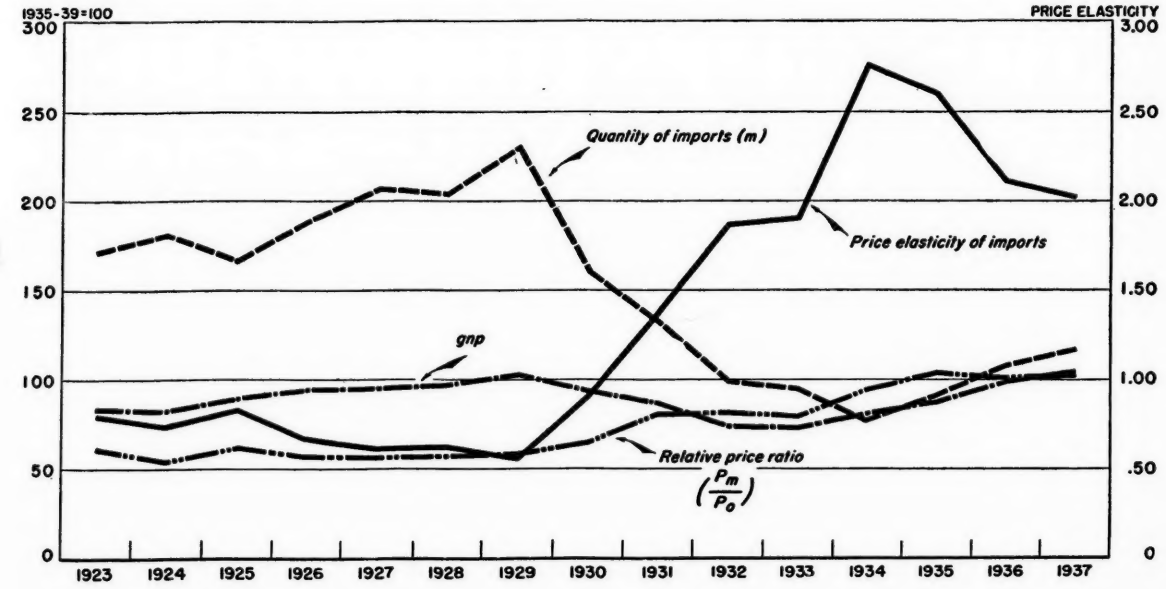
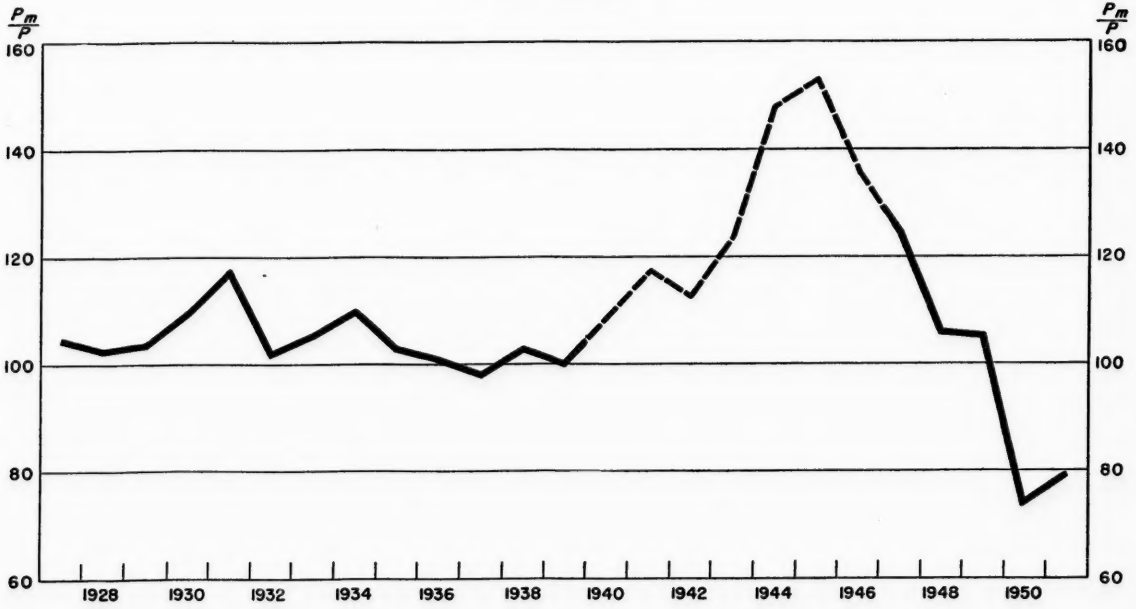


CHART 6. RATIO OF UNIT VALUE OF U.S. IMPORTS OF FINISHED MANUFACTURES FROM ERP COUNTRIES (P_m) TO DOMESTIC WHOLESALE PRICE (P)
(1939 = 100)

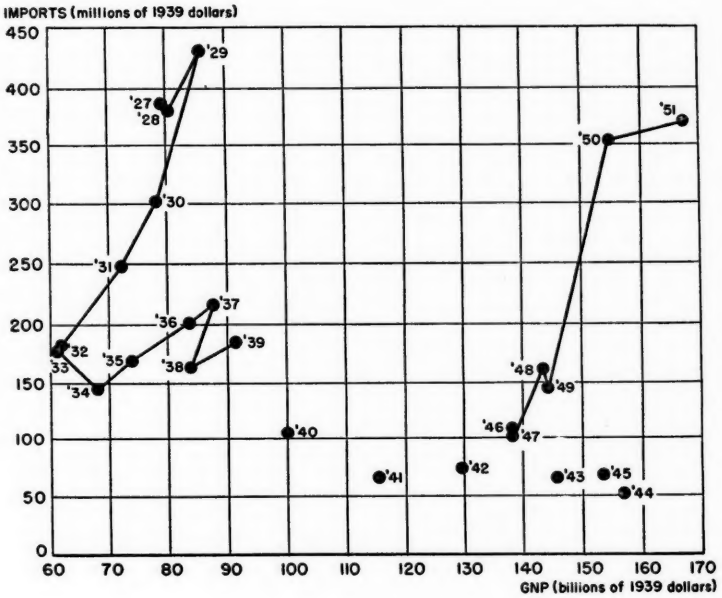


downward shift from the prewar years to the postwar years, the mean slope of the *m-gnp* relationship in the postwar period does not appear to be significantly different from the prewar one. Deviations from the mean slope might perhaps be due to changes in relative prices. Hence we may set up the hypothesis that the year-to-year changes in imports ($\Delta m = m_t - m_{t-1}$) are a function of the year-to-year changes in the gross national product ($\Delta gnp = gnp_t - gnp_{t-1}$) and the year-to-year changes in relative prices $\left[\Delta\frac{P_m}{P} = \left(\frac{P_m}{P}\right)_t - \left(\frac{P_m}{P}\right)_{t-1}\right]$, both for the prewar and the postwar years, as follows:

$$\Delta m = F\left(\Delta gnp, \Delta\frac{P_m}{P}\right) \tag{18}$$

In connection with the independent variable $\Delta\frac{P_m}{P}$, an experiment to

CHART 7. U.S. IMPORTS OF FINISHED MANUFACTURES FROM ERP COUNTRIES AND GROSS NATIONAL PRODUCT, 1927–51



test whether the dependence of Δm on $\Delta \frac{P_m}{P}$ is linear or not would be of interest. There are reasons for believing that the changes in imports associated with larger changes in relative prices would tend to be proportionately greater than those associated with smaller changes in relative prices. If a five-point change in the index of relative prices $\frac{P_m}{P}$ results in a change of imports of an amount x, it is highly probable that a ten-point change in $\frac{P_m}{P}$ would lead to a change in imports by an amount more than $2x$, while a one-point change in $\frac{P_m}{P}$ would give rise to a negligible change in imports very much less than $\frac{x}{5}$. Many of the finished manufactures of the ERP countries are imported into the United States for use by manufacturers. Most of the rest are purchased by consumers through importers and retailers. There are always "costs" involved in a change of the things a business firm has become accustomed to purchase. New contacts must be made; the quality of the new product tested; certain risks taken in the sale of a new product; and sometimes, the process of production modified to suit the new product. A one-point change in relative prices may not justify the change-over at all. A five-point change may make a partial or complete switch-over unavoidable for some importers. A ten-point change would not only increase the extent of substitution for those who had made a partial change, but also increase the number who must for the first time make a shift.

There are many ways of testing this hypothesis. We propose to do it by introducing both a linear term $\Delta \frac{P_m}{P}$ and a square term $\left(\tilde{\Delta}\frac{P_m}{P}\right)^2$ into the equation and then examining whether only one of the two terms is significant.[18] The result obtained for the period 1927–39 and 1947–51 as a whole is as follows, Δm and Δgnp being increments in any given year

[18] The sign $\sim$ indicates that the square term $\left(\tilde{\Delta}\frac{P_m}{P}\right)^2$ takes the same sign as that of $\Delta\frac{P_m}{P}$ for any given year. Thus, $\left(\Delta\frac{P_m}{P}\right)_{1937} = \left(\frac{P_m}{P}\right)_{1937} - \left(\frac{P_m}{P}\right)_{1936} = -2.7$, and $\left(\tilde{\Delta}\frac{P_m}{P}\right)^2 = -7.29$. The $\frac{P_m}{P}$ series is the same as defined on p. 428, above, with the base shifted to 1939. $\Delta\frac{P_m}{P}$ is the increment in any given year over the preceding year.

over the preceding year in millions of 1939 dollars:

$$\Delta m = \underset{(0.00075)}{0.00624}\ \Delta gnp - \underset{(1.06)}{0.022}\ \Delta \frac{P_m}{P} - \underset{(0.048)}{0.158}\left(\tilde{\Delta}\frac{P_m}{P}\right)^2 - 22.8 \qquad (19)$$

$$R = 0.92$$

Relative to the respective regression coefficients, the standard error of the $\left(\tilde{\Delta}\frac{P_m}{P}\right)^2$ term is much smaller than that of the $\Delta\frac{P_m}{P}$ term. The assumption that the change in imports is a function of $\left(\tilde{\Delta}\frac{P_m}{P}\right)^2$, therefore, has a much stronger basis in fact than the linear assumption. In fact, the omission of the $\Delta\frac{P_m}{P}$ term from the equation does not reduce the correlation coefficient to any noticeable extent.

$$\Delta m = \underset{(0.00103)}{0.00624}\ \Delta gnp - \underset{(0.027)}{0.159}\left(\tilde{\Delta}\frac{P_m}{P}\right)^2 - 22.8 \qquad (20)$$

$$R = 0.92$$

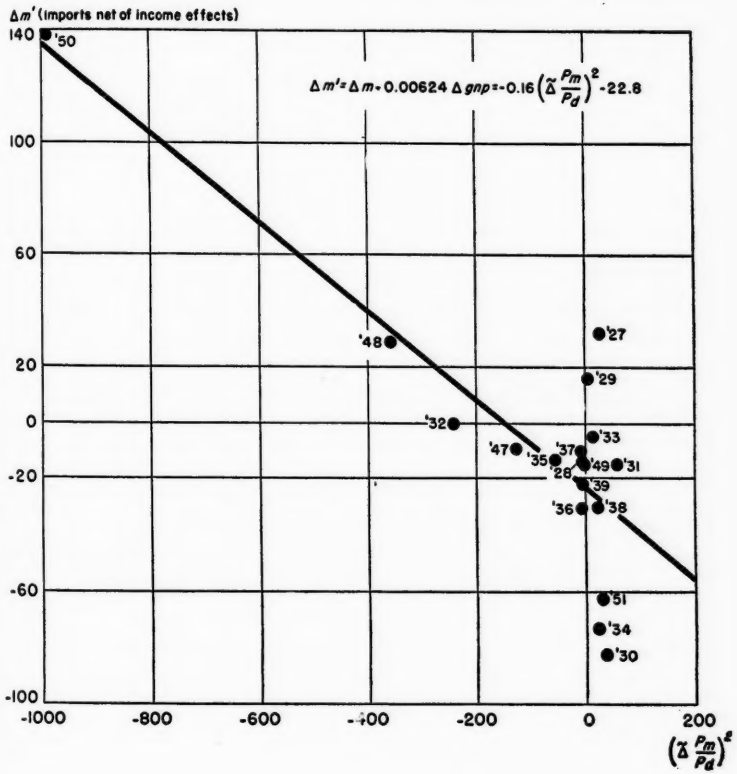
While the regression coefficient of the $\left(\tilde{\Delta}\frac{P_m}{P}\right)^2$ term is highly significant, it can be shown that the influence of the ratio of the prices of imported finished manufactures from the ERP countries to the prices of U.S. manufactures was effective only during the postwar years. In Chart 8, the change in imports, net of income effects,[19] is plotted against $\left(\tilde{\Delta}\frac{P_m}{P}\right)^2$. It is seen that the postwar points 1947–51 scatter along the regression line quite well; but the prewar points, with the exception of 1932 and 1935, tend to cluster along a vertical line at $0 < \left(\tilde{\Delta}\frac{P_m}{P}\right)^2 < 50$. This, of course, means that during most of the prewar years the changes in the ratio of ERP prices to U.S. prices were not of sufficient magnitude to affect the quantity of finished manufactures imported from the ERP countries. The reasons for the changes in import quantities, net of income effects, during these years must be sought elsewhere. This is quite consistent with the conclusion reached in the first part of this section that it was the changes in the ratio of ERP prices to the

[19] That is $\Delta m' = \Delta m - 0.00624\ \Delta gnp$, measured along the vertical axis in Chart 8.

prices of finished manufactures imported from other origins $\left(\text{i.e.,}\ \frac{P_m}{P_o}\right)$ that were significant in influencing the quantity of finished manufactures imported from the ERP countries during the prewar years.

It might be argued that the "nice" quantity-price relationship during the postwar years, after income effects have been allowed for, was spurious for two reasons: (1) the gradual improvement in the supply situation in ERP countries in the years immediately after the war, and (2) the effects of the Korean war. The increase in Δm from 1947 to 1948 might perhaps be attributed to the improvement in supply rather than

CHART 8. U.S. DEMAND FOR IMPORTS OF FINISHED MANUFACTURES FROM ERP COUNTRIES, 1927–39 AND 1947–51



to the decline in the price ratio;[20] but it is important to observe that there was a decline in $\Delta m'$ from 1948 to 1949. This latter development runs counter to the easing-of-supply theory; but it was also accompanied by an increase in $\Delta\frac{P_m}{P_d}$. The large increase in $\Delta m'$ in 1950 and the equally large decrease in $\Delta m'$ in 1951 apparently tend to justify the argument that these abrupt changes were due to the sudden rise and the consequent tapering off of demand on account of the Korean war. It must not be forgotten, however, that $\Delta m'$ represents the change in imports *after income effects have been allowed for;* the influence of the Korean war might therefore be expected to have been allowed for through the income effects. It is difficult, then, to believe that the rise and the subsequent fall in $\Delta m'$ are unrelated to the accompanying fall and rise in the price ratio.

From equation (20) the elasticity of demand for imported finished manufactures from the ERP countries can be calculated. Since Δm is a function of $\left(\tilde{\Delta}\frac{P_m}{P}\right)^2$, the elasticity varies with the magnitude of the change in relative prices $\left(\Delta\frac{P_m}{P}\right)$ itself, as shown in the following formula:

$$\epsilon = \frac{\frac{P_m}{P}}{m}(0.159)\,\Delta\frac{P_m}{P}$$

The greater the change in relative price, the greater will be the elasticity of demand. On the basis of the 1949, 1950, and 1951 figures of m and $\frac{P_m}{P}$, the elasticity of demand for imports of finished manufactures from the ERP countries with respect to the ratio of ERP and U.S. domestic prices is estimated for various magnitudes of $\Delta\frac{P_m}{P}$ in Table 1.

It is seen that, with the ratio $\frac{P_m}{P}\Big/ m$ at the 1949 level of 0.705, a ten-point reduction of relative prices would yield an elasticity of demand greater than unity, and a thirty-point reduction, an elasticity greater than three. On the other hand, a thirty-point reduction in 1950 would yield only about unity elasticity. The reason is, of course, that, with the reduction in $\frac{P_m}{P}$ and the large increase in m from 1949 to 1950, the

[20] This is quite doubtful, as exports to the United States are merely a rather small part of total exports and a still smaller portion of the total output of finished manufactures in the ERP countries, which were quite anxious to earn dollars by shifting supply from other purchasers to U. S. buyers.

magnitude of the ratio $\frac{P_m}{P} \Big/ m$ is much smaller (0.208), and this results in a smaller elasticity. For equal price changes, elasticities are about the same in 1951 as in 1950, as the ratio $\frac{P_m}{P} \Big/ m$ has not changed much.

TABLE 1. PRICE ELASTICITY AT VARIOUS VALUES OF $\frac{P_m}{P}/m$ FOR VARIOUS PRICE RATIO CHANGES

$\Delta \frac{P_m}{P}$ (per cent)	1949 $\frac{P_m}{P}/m = 0.705$	1950 $\frac{P_m}{P}/m = 0.208$	1951 $\frac{P_m}{P}/m = 0.214$
5	0.56	0.17	0.17
10	1.13	0.34	0.34
20	2.26	0.67	0.68
30	3.38	1.01	1.03
40	4.51	1.34	1.37

Finally, it would be of interest to compare the two estimates of income elasticity of demand obtainable from equations (16) and (20). In spite of the difference in the price terms and in the years covered by the equations, confidence in the income terms would be enhanced if the two elasticity estimates were close to each other. The two figures are, respectively, 1.34 and 1.68. The difference of 0.34 amounts to about 20 per cent of the higher figure and is not unreasonably large.

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